CKV-20DST1/20HX1

RM-Y116 RM-Y117

SERVICE MANUAL

US Model

CKV-20DST1

Chassis No. SCC-G02B-A

CKV-20HX1

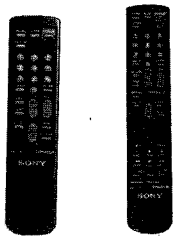
Chassis No. SCC-G02A-A

US/Canadian Model

CKV-20HX1

Chassis No. SCC-G23A-A

Photo : CKV-20HX1



RM-Y116 RM-Y117

BA-1 CHASSIS

MODELS OF THE SAME SERIES	
CKV-20DST1/20HX1	KV-20V50
KV-13TR28/13TR29 KV-1430R/1440WR	KV-20TS29/20TS32 KV-21STR2/2170RS

SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2-13 UHF: 14-69 CABLE TV: 1-125
Picture tube	Hi-Black Trinitron® tube 20-inch picture measured diagonally 21-inch picture tube measured diagonally
Antenna	75 ohm external antenna terminal for VHF/UHF
Input	VIDEO AND S VIDEO S VIDEO IN (S terminal) (KV-20HX1 only) Y: 1 Vp-p, 75-ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal) 75-ohms Video (BNC connector): 1 Vp-p, 75-ohms unbalanced, sync negative Audio (phono jacks) : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms Video, Audio (monaural) (8-pin connector) (KV-20HX1 only) Composite video 1Vp-p, sync negative 75-ohms terminated
Speaker output	2W×2 (CKV-20DST1) 3W×2 (CKV-20HX1)
Speaker size	Full range 80 mm (3 1/4 in.)×2 units
Audio frequency response	50Hz-20kHz
Power requirements	120 V AC, 60Hz
Power consumption	115W (CKV-20DST1) 120W (CKV-20HX1)
Standby mode	4W

- Continued on next page -

MICROFILM

TRINITRON® COLOR TV

SONY®

Dimensions (w/h/d)	526×488×408 mm (CKV-20DST1) ($20_{3/4}$×$19_{1/4}$×$16_{1/8}$ inches) 550×464.7×471.3 mm (CKV-20HX1) ($21_{3/4}$×$18_{3/8}$×$18_{5/8}$ inches)
Weight	22.4 kg (49 lbs 6 oz) (CKV-20DST1) 24.0 kg (52 lbs 15 oz) (CKV-20HX1)
Supplied accessories	Remote Commander RM-Y116 (1) (CKV-20DST1) with 2 size AA (R6) EVEREADY batteries Remote Commander RM-Y117 (1) (CKV-20HX1) with 1 size AA (R6) EVEREADY batteries
Recommended accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M YC-15V/30V, RK-74A

Design and specifications are subject to change without notice.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.

8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a coldwater pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

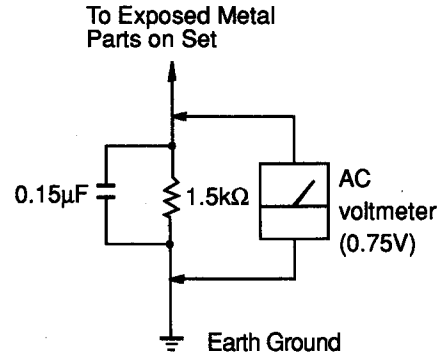


Fig. A. Using an AC voltmeter to check AC leakage.

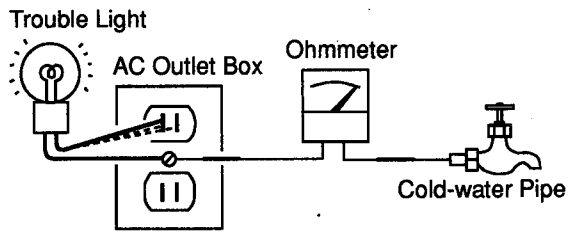


Fig. B. Checking for earth ground.

TABLE OF CONTENTS

Section	Title	Page
1.	GENERAL	
1-1.	Introducting the Sony Trinitron®Color TV Monitor	5
1-2.	Locating the Controls	6
1-3.	Using the ON-SCREEN Menus	8
1-4.	Turning the Cable Mode ON or OFF	9
1-5.	Presetting TV Channels	10
1-6.	Connecting Other Equipment	12
1-7.	Watching TV Programs	14
1-8.	Using Convenient Features	15
1-9.	Using Closed Caption	15
1-10.	Adjusting Picture and Sound Quality	16
1-11.	Using the Timer-Activated Functions	19
1-12.	Customizing the Screen Display	22
1-13.	Using the Pre-Programmed Remote Commander (CKV-20HX1 only)	24
1-14.	Troubleshooting	26
2.	DISASSEMBLY	
2-1-1.	Rear Cover Removal (CKV-20HX1)	27
2-1-2.	Rear Cover Removal (CKV-20DST1)	27
2-2.	Service Position	27
2-3.	Picture Tube Removal	28
3.	SET-UP ADJUSTMENTS	
3-1.	Beam Landing	29
3-2.	Convergence	30
3-3.	Focus	32
3-4.	Screen (G2)	32
3-5.	Method of Setting the Service Adjustment Mode	32
3-6.	White Balance Adjustments	32
4.	SAFETY RELATED ADJUSTMENTS	33
5.	CIRCUIT ADJUSTMENTS	
5-1.	Electrical Adjustment by Remote Commander	35
5-2.	A Board Adjustments	37
6.	DIAGRAMS	
6-1.	Block Diagram	41
6-2.	Circuit Boards Location	45
6-3.	Printed Wiring Boards and Schematic Diagrams	45
	• A Board	46
	• G Board	53
	• UB Board	56
	• S Board	57
	• C Board	59
6-4.	Semiconductors	62
7.	EXPLODED VIEWS	
7-1.	Chassis	63
7-2.	Picture Tube	64
8.	ELECTRICAL PARTS LIST	65

1-1. INTRODUCTING THE SONY TRINITRON® COLOR TV MONITOR

SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

Identifying your monitor

Check the model number of your monitor.

There are slight differences among four models covered by this manual.

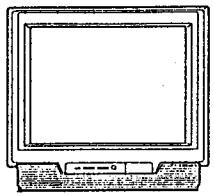
Check the table below to see what your monitor is equipped with before you start operating it.

Table of models YES: equipped NO: not equipped

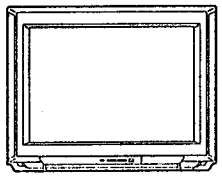
	CKV-20DST1	CKV-20HX1
MTS stereo	NO	YES
Pre-Programmed feature	NO	YES
SURROUND system	NO	YES
Front panel A/V jacks	NO	YES
S video input jack	NO	YES
Headphones jack	NO	YES
Remote Commander	RM-Y116	RM-Y117

Design

CKV-20DST1/RM-Y116

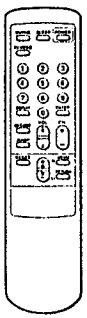


CKV-20HX1/RM-Y117

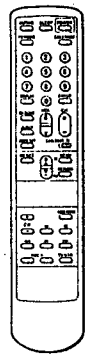


Supplied Remote Commander

RM-Y116



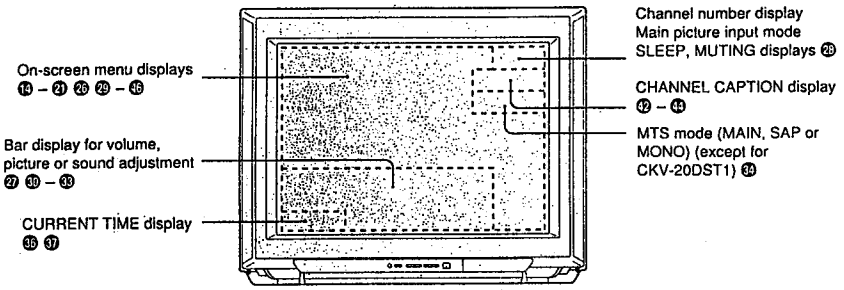
RM-Y117



1-2. LOCATING THE CONTROLS

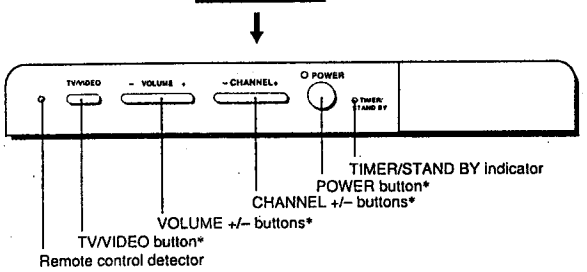
Screen Displays

For details, see the pages indicated by the numbered black circles ●.

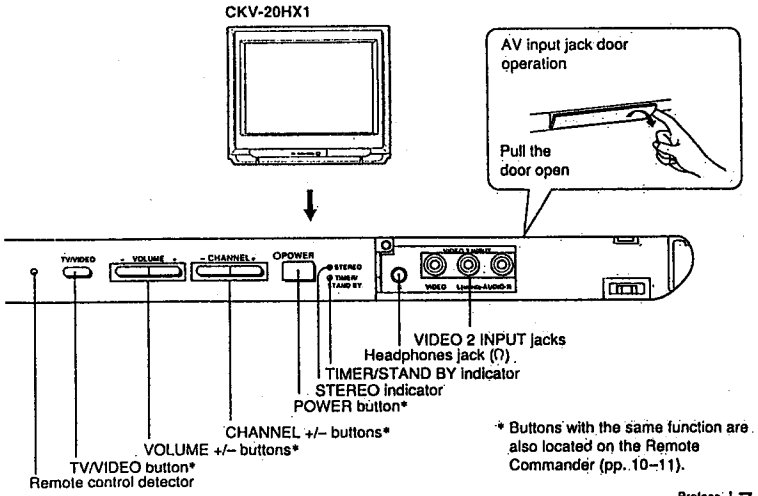

On-screen menu displays
⓭ – ㉑ ㉖ ㉙ – ㊱
Bar display for volume, picture or sound adjustment
㉗ ㉚ – ㉜
CURRENT TIME display
㉟ ㊲
Channel number display
Main picture input mode
SLEEP, MUTING displays ㉘
CHANNEL CAPTION display
㊷ – ㊹
MTS mode (MAIN, SAP or MONO) (except for CKV-20DST1) ㊴

Front Panel

CKV-20DST1

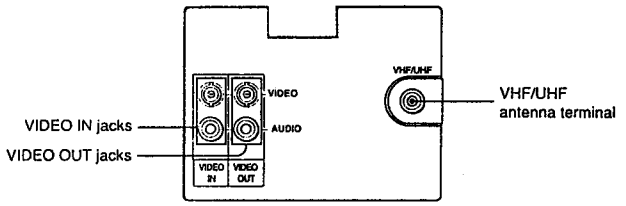


CKV-20HX1

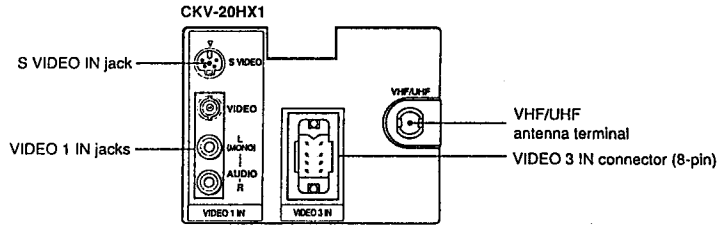


Rear Panel

CKV-20DST1



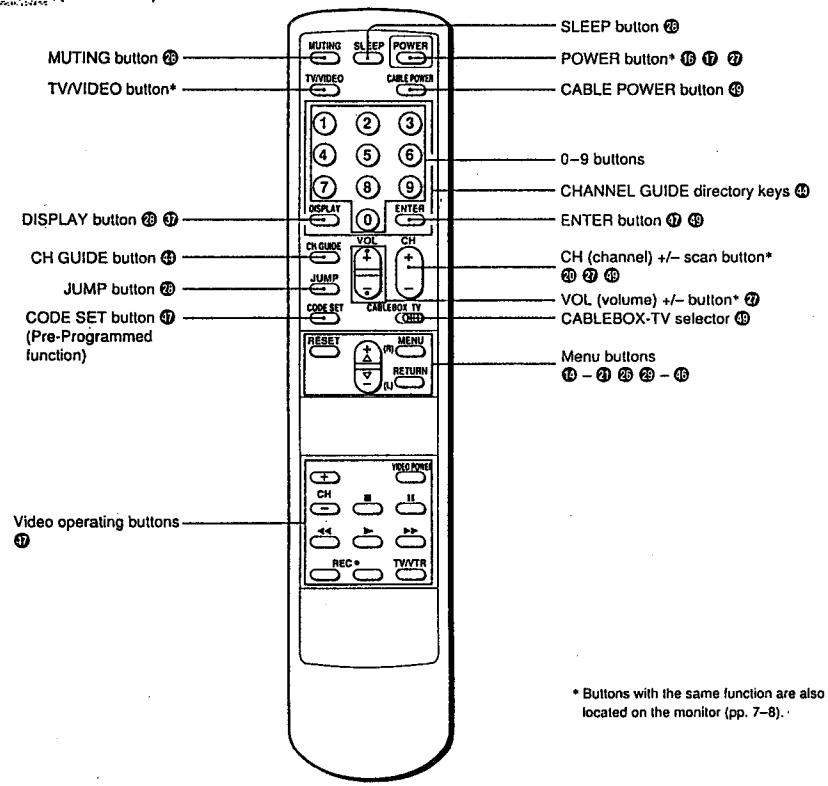
CKV-20HX1



Remote Commander

For details, see the pages indicated by the numbered black circles ●.

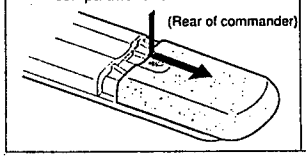
RM-Y117 (CKV-20HX1)



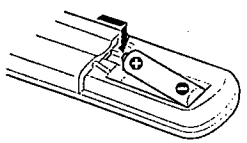
* Buttons with the same function are also located on the monitor (pp. 7–8).

Installing Battery

1 Remove the battery compartment cover.



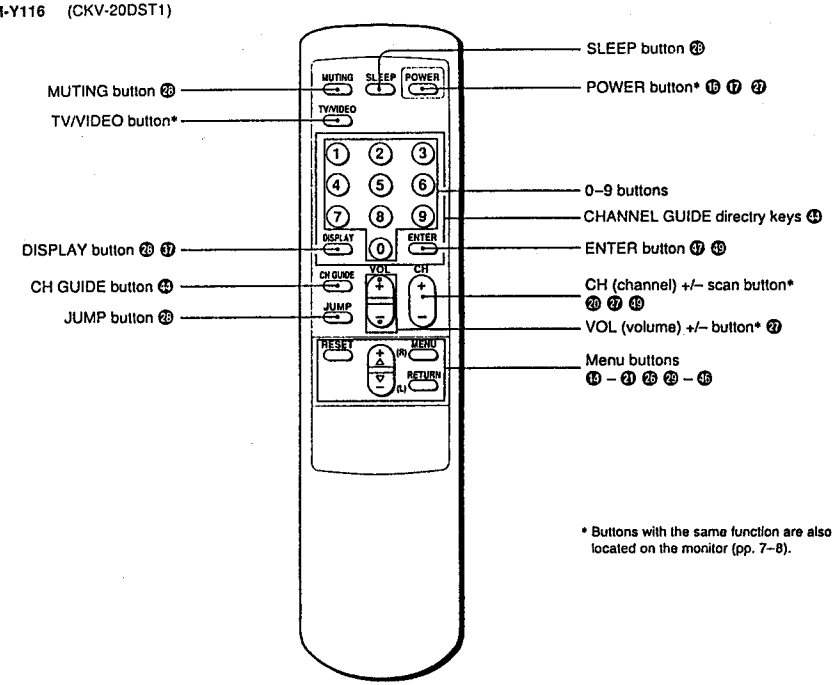
2 Insert a size AA (R6) battery in correct polarity.



Note

If the CABLEBOX-TV selector is set to CABLEBOX, the Remote Commander is able to control a connected cable box, not the monitor. Set the selector to TV to control the monitor with the Remote Commander (You can use POWER button at any case).

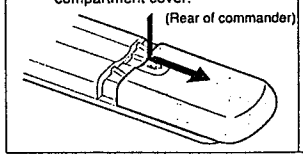
RM-Y116 (CKV-20DST1)



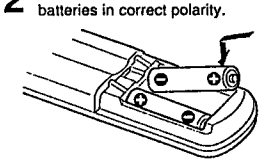
* Buttons with the same function are also located on the monitor (pp. 7–8).

Installing Batteries

1 Remove the battery compartment cover.



2 Insert two size AA (R6) batteries in correct polarity.



WARNING
Batteries may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

Battery life
With normal operation, batteries will last up to half a year. If the Remote Commander does not operate properly, the batteries might be exhausted. Replace both of them with new ones.

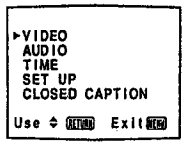
To avoid damage from possible battery leakage
Remove the batteries if you do not plan to use the Remote Commander for a fairly long time.

1-3. USING THE ON-SCREEN MENUS

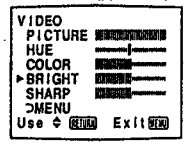
The following flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings. See the indicated pages for instructions on using each feature.

For picture quality adjustment

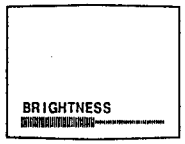
Main menu



VIDEO menu (pp. 30–31)

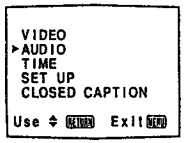


Adjustment bar

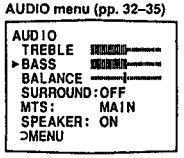


For sound quality adjustment

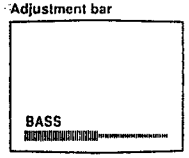
Main menu



AUDIO menu (pp. 32–35)

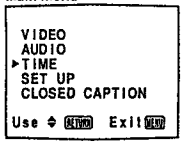


Adjustment bar

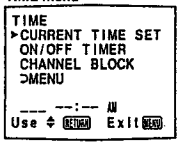


For time-related settings

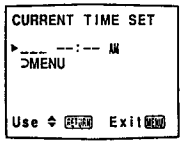
Main menu



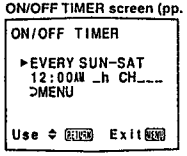
TIME menu



CURRENT TIME SET screen (pp. 36–37)



ON/OFF TIMER screen (pp. 38–39)



CHANNEL BLOCK screen (pp. 40–41)

For presetting and other functions

Main menu

```
VIDEO
AUDIO
TIME
►SET UP
CLOSED CAPTION

Use ≑ RETURN  Exit MENU
```

SET UP menu

```
SET UP
►CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

For closed caption setting

Main menu

```
VIDEO
AUDIO
TIME
SET UP
►CLOSED CAPTION

Use ≑ RETURN  Exit MENU
```

CLOSED CAPTION screen (p. 29)

```
CLOSED CAPTION
►CC/TEXT OFF
CC1
CC2
TEXT1
TEXT2
⊃MENU
Use ≑ RETURN  Exit MENU
```

CABLE ON/OFF screen (p. 16)

```
SET UP
►CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

AUTO PROGRAM screen (pp. 17–18)

```
AUTO PROGRAM
```

CHANNEL ERASE/ADD screen (pp. 19–21)

```
CH ERASE/ADD
                10
►ERASE
ADD
⊃MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

CHANNEL CAPTION/GUIDE screen (pp. 42–43)

```
CH CAPTION/GUIDE
① ② ③        ►.---
④ ⑤ ⑥        ----
⑦ ⑧ ⑨        ⊃
CLEAR ⓪ ENT

Use ≑ RETURN  Exit MENU
```

S VIDEO ON/OFF screen (p. 26)

```
SET UP
CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
►S VIDEO: ON
VIDEO LABEL
⊃MENU
```

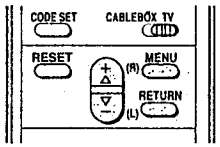
VIDEO LABEL screen (pp. 45–46)

```
VIDEO LABEL
►VIDEO1: VIDEO1
VIDEO2: VIDEO2
VIDEO3: VIDEO3
⊃MENU

Use ≑ RETURN  Exit MENU
```

Navigating through the Menus

Remote Commander



To display the main menu
Press MENU.

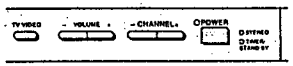
To return to the previous menu
Press △+ or ▽– to select "⊃ MENU."
Then press RETURN.

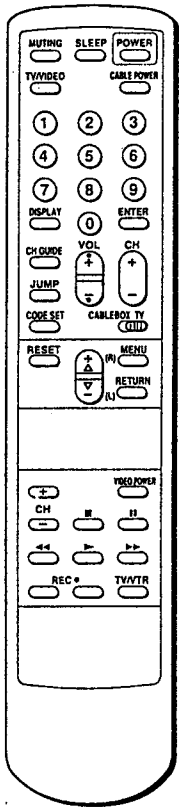
To return to the main menu
Repeat the above, until you reach the main menu.

To return to the normal screen
Press MENU on the Remote Commander.

Note

The menus disappear automatically if you do not press a button within 90 seconds.
The menu you cannot select appears in black.





RM-Y117

To return to the normal screen
Press MENU.

1-4. TURNING THE CABLE MODE ON OR OFF

If you have cable connected to your monitor (pp.12–13), follow the steps below to turn the cable connection on or off. CABLE is preset to ON when you use your monitor for the first time. Then turn CABLE to OFF to preset or watch VHF or UHF channels (pp. 17–21 and 27).

1 Press POWER on the monitor or the Remote Commander to turn the monitor on.
The TIMER/STAND BY indicator blinks until the picture appears.

POWER or POWER

2 Press MENU.
The main menu appears.

MENU

```
►VIDEO
AUDIO
TIME
SET UP
CLOSED CAPTION

Use ≑ RETURN  Exit MENU
```

3 Press △+ or ▽– to select SET UP.

(R) (L)

```
VIDEO
AUDIO
TIME
►SET UP
CLOSED CAPTION

Use ≑ RETURN  Exit MENU
```

Press RETURN.
The SET UP menu appears, and the cursor points to "CABLE".

RETURN

```
SET UP
►CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

Note

If the CABLE display appears in black, the monitor is in video mode and you cannot select CABLE. Press TV/VIDEO to change to TV mode.

4 Press RETURN again.

RETURN

```
SET UP
►CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

Press △+ or ▽– to select ON or OFF alternately.

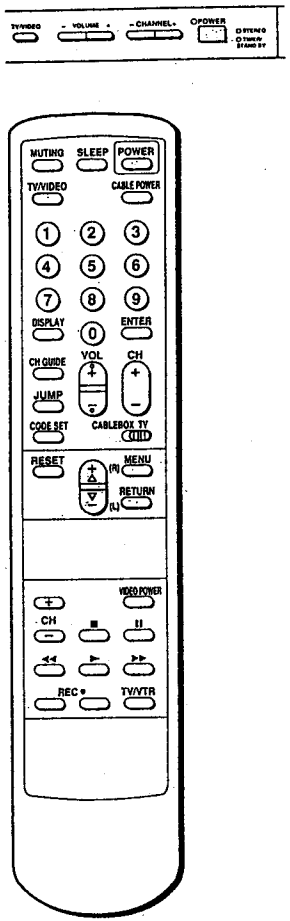
```
SET UP
CABLE: ON
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

↔

```
SET UP
CABLE: OFF
AUTO PROGRAM
CH ERASE/ADD
CH CAPTION/GUIDE
S VIDEO
VIDEO LABEL
⊃MENU
```

Press RETURN.
The setting is completed.

1-5. PRESETTING TV CHANNELS



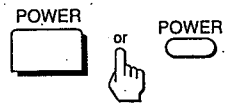
RM-Y117

Presetting TV Channels Automatically

Note

Perform auto programming during the day rather than late at night, when some channels may not be broadcasting.

1 Press POWER on the monitor or the Remote Commander to turn the monitor on.



2 Turn the cable connection on or off to select the type of channel you want to preset, VHF/UHF or cable TV.
(Follow the steps in "Turning the Cable Mode On or Off." p. 16)

3 Press MENU.
The main menu appears.

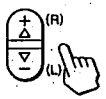
4 Press △+ or ▽– to select SET UP.

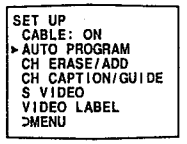
Press RETURN.
The SET UP menu appears.

Note

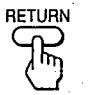
If the AUTO PROGRAM display appears in black, the monitor is in video mode and you cannot select AUTO PROGRAM. Press TV/VIDEO to change to TV mode.

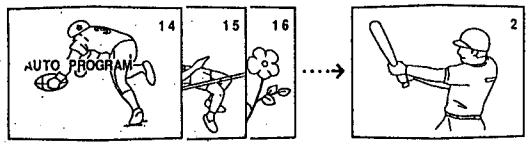
5 Press △+ or ▽– to select AUTO PROGRAM.





Press RETURN.





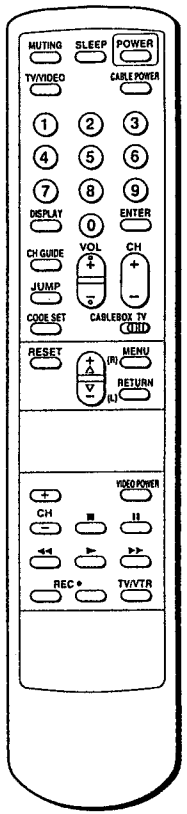
"AUTO PROGRAM" appears on the screen and receivable channels (other than the channels already preset) are preset in numerical sequence. The channels previously preset will not remain in the monitor's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

Receivable channels for this monitor
VHF: 2–13
UHF: 14–69
Cable: 1–125

To select TV channels without presetting
Press 0–9 and ENTER.

To return to the normal screen
Press MENU.

To erase unnecessary channels, or to add channels that could not be preset automatically because their signal was too weak, follow the steps in "Erasing Unnecessary Channels — CHANNEL ERASE" (pp.19–20) and "Presetting Only Desired Channels — CHANNEL ADD" (p. 21).



RM-Y117

Erasing Unnecessary Channels—CHANNEL ERASE

Use this feature to erase unnecessary TV channels, so that when you press CH +/–, the channel(s) are skipped.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

2 Press Δ+ or ∇– to select SET UP.

```
 VIDEO
 AUDIO
 TIME
▸SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP
▸CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 ↻MENU
```

3 Press Δ+ or ∇– to select CH ERASE/ADD.

```
SET UP
 CABLE: ON
 AUTO PROGRAM
▸CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 ↻MENU
```

Press RETURN.
The CH ERASE/ADD screen appears, and the cursor points to "ERASE".

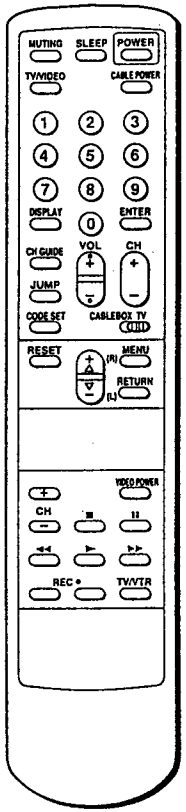
RETURN

```
CH ERASE/ADD
                10
 ▸ERASE
  ADD
 ↻MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

Note

If CH ERASE/ADD display appears in black, the monitor is in video mode and you cannot select CH ERASE/ADD. Press TV/VIDEO to change to TV mode.



RM-Y117

To return to the normal screen
Press MENU.

Note

When you erase a VHF or UHF channel, the cable TV channel with the same number is also erased, and vice versa.

4 Press the CH +/– button to select the channel you want to erase.
For example, to erase channel 8, press CH +/– until 8 appears.

CH

```
CH ERASE/ADD
                8
 ▸ERASE
  ADD
 ↻MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

Press RETURN.
A "–" sign appears in front of the channel number display, indicating that the channel is erased from the channel scan memory.

RETURN

```
CH ERASE/ADD
               - 8
 ▸ERASE
  ADD
 ↻MENU

Use ≑ RETURN  Exit MENU
```

The next time you press the CH +/– buttons, channel 8 will be skipped.

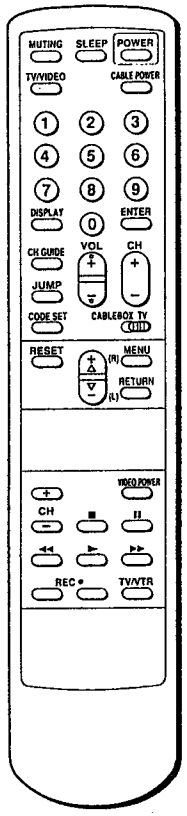
To erase other channels
Repeat step 4.

Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	Corresponding cable TV channel
1	A-8
5	A-7
6	A-6
14	A
15	B
16	C
17	D
18	E
19	F
20	G
21	H
22	I
23	J
24	K
25	L
26	M
27	N
28	O
29	P
30	Q
31	R
32	S

Number on this TV	Corresponding cable TV channel
33	T
34	U
35	V
36	W
37	W+1
38	W+2
39	W+3
⋮	⋮
93	W+57
94	W+58
95	A-5
96	A-4
97	A-3
98	A-2
99	A-1
100	W+59
101	W+60
102	W+61
⋮	⋮
123	W+82
124	W+83
125	W+84

* This designation of cable TV channels conforms to the EIA/NCTA recommendation. Check with your local cable TV company for more complete information on the available channels.



RM-Y117

To return to the normal screen
Press MENU.

Note

If you add a VHF or UHF channel, the cable TV channel with the same number is also added, and vice versa.

Presetting Only Desired Channels—CHANNEL ADD

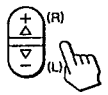
Use this feature to add channels one by one to the channel scan memory.

1-3 (Follow steps 1–3 in "Erasing Unnecessary Channels—CHANNEL ERASE," p.19.)

Note

If the CH ERASE/ADD display appears in black, the monitor is in video mode and you cannot select CHANNEL ERASE/ADD.
Press TV/VIDEO to change to TV mode.

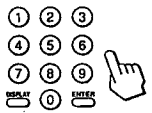
4 Press Δ + or ∇ – to select ADD.




```
CH ERASE/ADD
                10
   ERASE
 ▸ADD
  >MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

5 Press 0–9 and ENTER to select the channel you want to add.
For example, to add channel 25, press 2, 5 and ENTER.



```
CH ERASE/ADD
                25
   ERASE
 ▸ADD
  >MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

Press RETURN.
A "+" sign appears in front of the channel number display, indicating that the channel is added to the channel scan memory.

```
CH ERASE/ADD
                +25
   ERASE
 ▸ADD
  >MENU

Use ≑ RETURN  Exit MENU
```

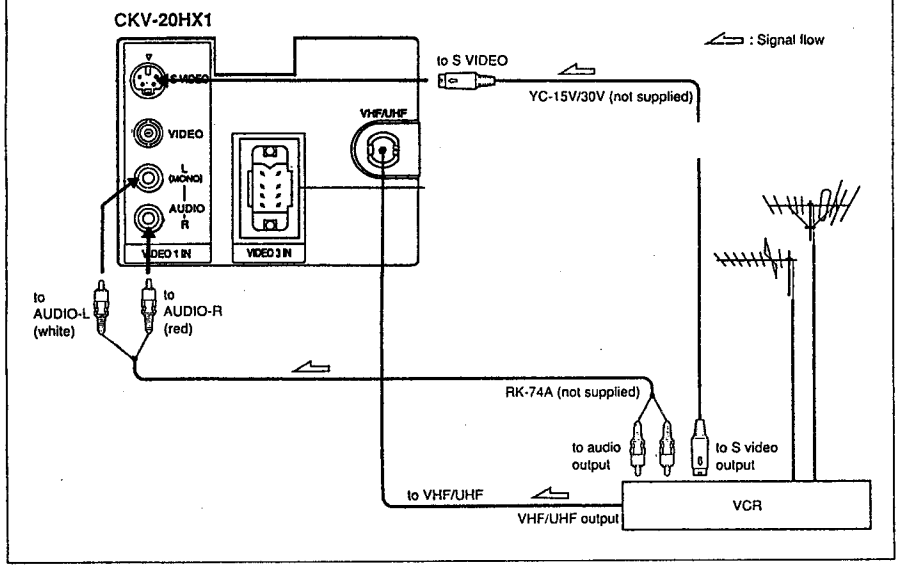
To add other channels
Repeat step 5.

1-6. CONNECTING OTHER EQUIPMENT

Video Equipment

After connecting, you will be able to playback video tapes.

Connecting a VCR with an S video output jack (CKV-20HX1 only)



Notes

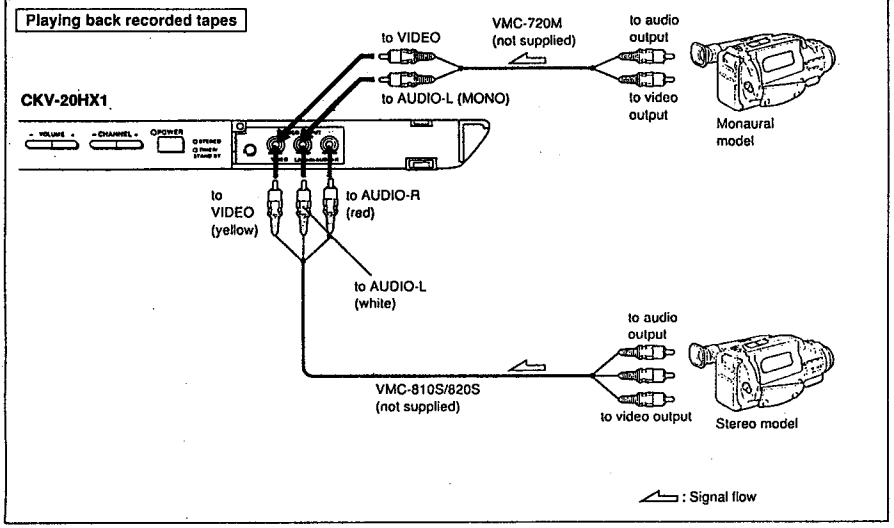
- If you connect a monaural VCR, connect the audio output of the VCR to the L (MONO) jack of VIDEO 1 IN on the monitor. The monaural sound will be heard from both speakers.
- For operating instructions, refer to the instruction manual furnished with the VCR.
- If the picture or sound is affected, move the VCR away from the monitor.
- If S VIDEO is set to OFF, you cannot watch VCR playback pictures from the S VIDEO IN.
  To set S VIDEO to ON, see "Watching a Video with Your S Video-Equipped VCR", p. 26.

About S video input

Video input and output signals can be separated into Y (luminance or brightness) and C (chroma or color) signals. Usually these two signals are combined in a VCR and sent as one signal to a TV. Separation of the Y and C signals prevents them from interfering with one another, thereby inproving picture (especially color) quality.
This monitor is equipped with an S video input jack through which these separated signals can be input directly. This way you can connect your S video-equipped VCR separately from a non-S video VCR.

Connecting camcorders (CKV-20HX1 only)

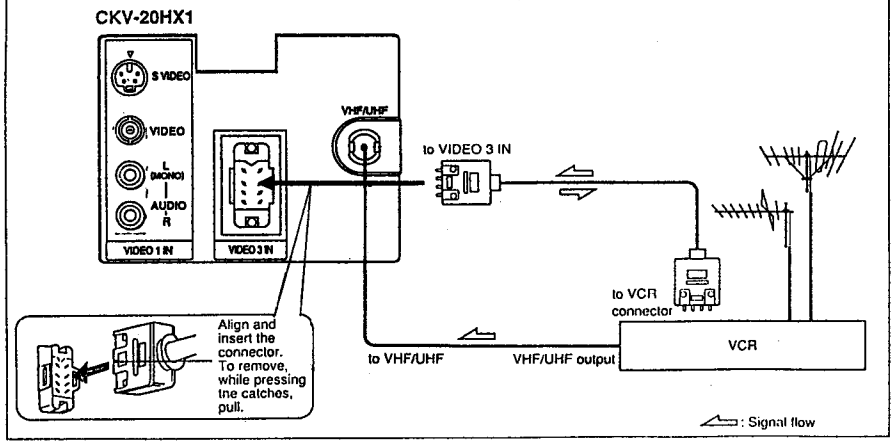
Playing back recorded tapes



Preparing for use

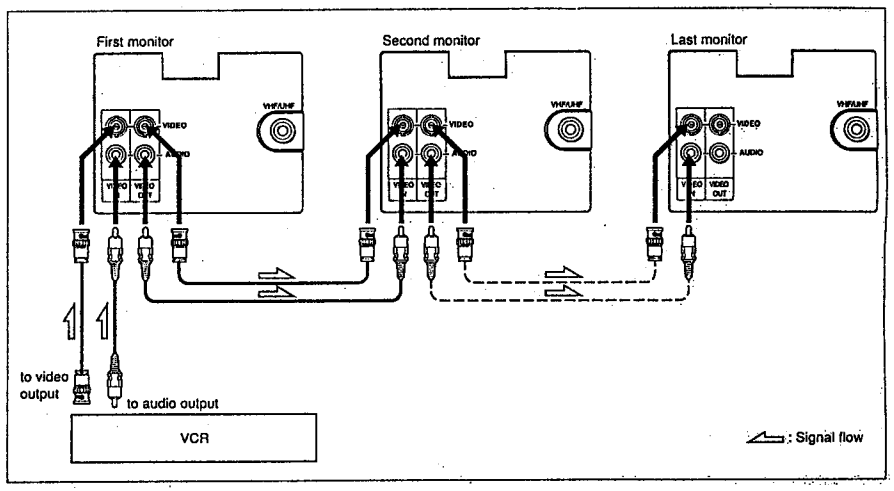
Same as p. 23.

Connecting video equipment with 8-pin connector (CKV-20HX1 only)



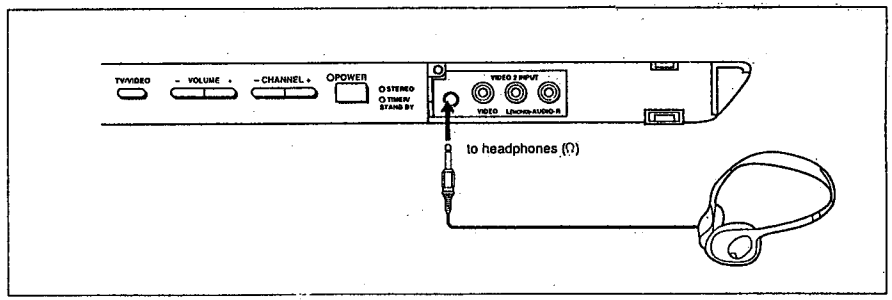
Connecting Several Monitors (CKV-20DST1 only)

A loop-through connection is convenient for monitoring the same signal on other monitors.



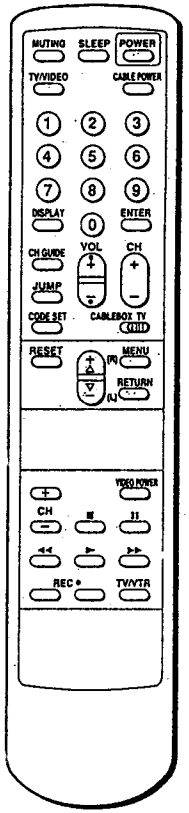
VIDEO OUT jacks are loop-through outputs of VIDEO IN jacks. Connect to the video and audio inputs of another monitor.

Connecting Headphones (CKV-20HX1 only)



Note

To prevent hearing damage due to sudden or prolonged excessive volume, do not raise the headphones volume too high while listening.



RM-Y117

To return to the normal screen
Press MENU.

Note

If you set S VIDEO to ON, the monitor automatically receives S video signals whenever a VCR with S video is connected.

Watching a Video with Your S Video-Equipped VCR (CKV-20HX1 only)

Use this feature to set S VIDEO to ON or OFF depending on the kind of video equipment you have connected to the monitor. For instructions on connecting video equipment, see pp. 22–24.

Note

If the monitor is in TV, VIDEO 2 or VIDEO 3 mode, the S VIDEO display appears in black and cannot be selected.
Press TV/VIDEO to change to VIDEO 1 mode.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press △+ or ▽– to select SET UP.

(R) (L)

```
 VIDEO
 AUDIO
 TIME
▸SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP
▸CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: ON
 VIDEO LABEL
 ↓MENU
```

3 Press △+ or ▽– to select S VIDEO.
Then press RETURN.

(R) (L) RETURN

```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
▸S VIDEO: ON
 VIDEO LABEL
 ↓MENU
```

Press △+ or ▽– to select ON or OFF alternately.

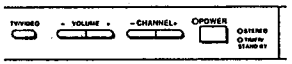
```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: ON
 VIDEO LABEL
 ↓MENU
```

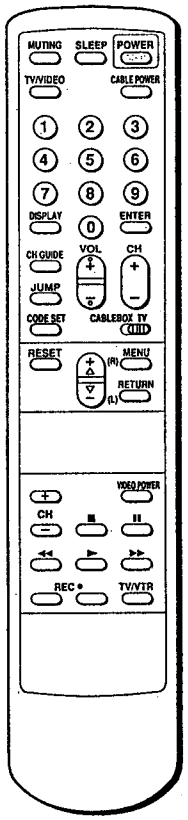
↔

```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: OFF
 VIDEO LABEL
 ↓MENU
```

Press RETURN.
The setting is completed.

1-7. WATCHING TV PROGRAMS





RM-Y117

1 Press POWER on the monitor or the Remote Commander to turn the monitor on.
The TIMER/STAND BY indicator blinks until the picture appears.

POWER or POWER

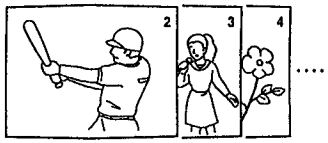
2 Turn the cable mode on or off to select the type of channel you want to watch, VHF/UHF or cable TV.
(Follow the steps in "Turning the Cable Mode On or Off," p. 16.)

If "VIDEO" or "S VIDEO" is displayed on the screen, press the TV/VIDEO button so that the channel number appears.

3 Select a channel in one of the following two ways:

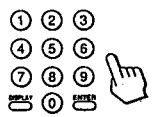
To scan the preset channels* in numerical sequence
Press CH +/–.

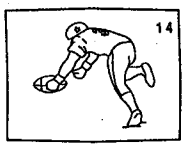
CH



* For more information on presetting channels, see pp. 17–21.

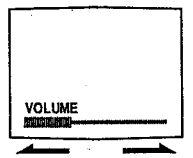
To select a channel directly
Press 0–9 and ENTER.
For example, to select channel 14, press 1, 4 and ENTER.





4 Press VOL +/– to adjust the volume.

VOL

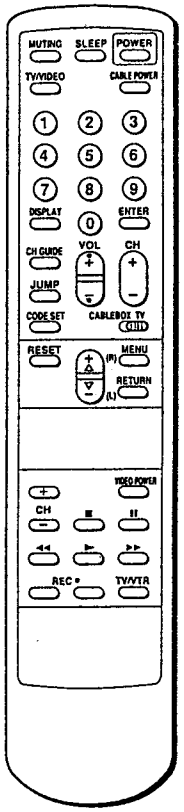


The display will disappear automatically after 3 seconds.

Press + to increase the volume.
Press – to decrease the volume.

To turn off the monitor
Press POWER on the monitor or the Remote Commander again.

1-8. USING CONVENIENT FEATURES



RM-Y117

Muting the Sound — MUTING

Press MUTING.
The display "MUTING" will appear on the screen.

MUTING

To restore the sound
Press MUTING again, or press VOL +.

Keeping the Displays On-Screen — DISPLAY

To display the channel
Press DISPLAY.
All the existing displays appear: channel number, channel caption (if set), MTS mode ("SAP" only), window picture input mode and the current time ("AM" or "PM" disappears after about three seconds).

DISPLAY

To cancel the display
Press DISPLAY again.
The channel display will disappear.

Using the Sleep Timer — SLEEP

The sleep timer turns off the monitor automatically after the amount of time you select.

Press SLEEP.
Each time you press SLEEP, the time increments "30", "60", "90" and "OFF" mode appear in sequence.

SLEEP

SLEEP 30
SLEEP 60
SLEEP 90
SLEEP OFF

The SLEEP display appears about one minute before the monitor turns off.

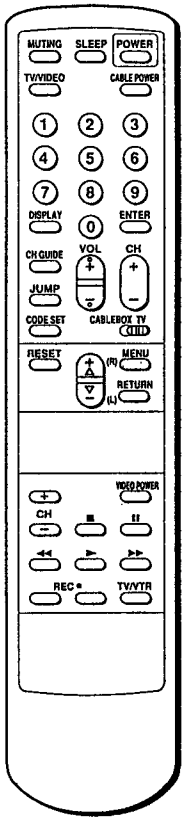
To cancel the setting
Press SLEEP until "OFF" mode appears.
The "SLEEP OFF" display appears for about three seconds.
OR
Turn the monitor off.
The sleep timer setting is cancelled.

Switching Quickly Between Two Channels — JUMP

Press JUMP once to recall the channel you were watching previously. Press JUMP again to switch back. Use this feature to keep track of two programs alternately.

JUMP

1-9. USING CLOSED CAPTION



RM-Y117

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

2 Press △+ or ▽– to select CLOSED CAPTION.
Then press RETURN.
The CLOSED CAPTION screen appears.

(R) (L)

RETURN

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 >MENU
Use ≑ RETURN  Exit MENU
```

3 Press △+ or ▽– to select closed caption mode.

(R) (L)

Select CC1 or CC2 to view Captions.
A Caption is a printed version of the dialogue or sound effects of a program. (The mode should be set to CC1 for most programs.)

```
CLOSED CAPTION
 CC/TEXT OFF
▸CC1
 CC2
 TEXT1
 TEXT2
 >MENU
Use ≑ RETURN  Exit MENU
```

Select TEXT1 or TEXT2 to view Text.
Text is information that is presented using the half to full television screen. It is usually not related to the program.

```
CLOSED CAPTION
 CC/TEXT OFF
 CC1
 CC2
▸TEXT1
 TEXT2
 >MENU
Use ≑ RETURN  Exit MENU
```

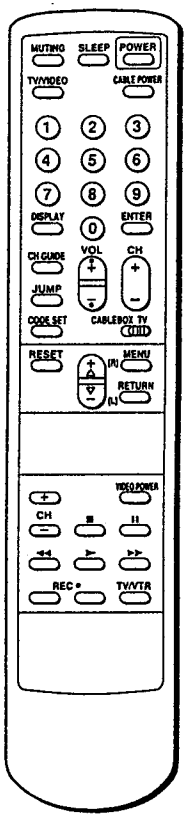
Select CC/TEXT OFF if you do not want to use the CLOSED CAPTION mode.

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 >MENU
Use ≑ RETURN  Exit MENU
```

Press RETURN.
The setting is completed.

RETURN

1-10. ADJUSTING PICTURE AND SOUND QUALITY



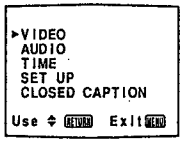
RM-Y117

Adjusting the Picture

You can adjust the picture (and sound, pp. 32–35) for each input mode (TV, VIDEO 1, VIDEO 2, VIDEO 3) by pressing TV/VIDEO on the monitor or on the Remote Commander to select the input mode before making the adjustments. These adjustments are retained in memory even when you turn off the monitor until you change the adjustments again.

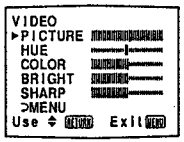
1 Press MENU.
The main menu appears, and the cursor points to "VIDEO".

MENU

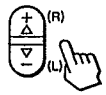


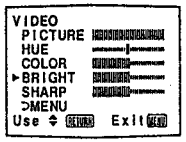
2 Press RETURN.
The VIDEO menu appears.

RETURN



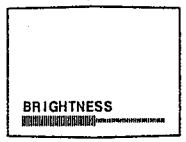
3 Press Δ+ or ∇– to select the item you want to adjust.
For example, to adjust the picture brightness, select BRIGHT.



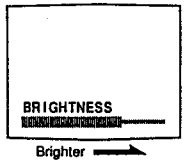


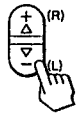
Press RETURN.
The adjustment bar appears.

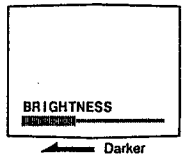
RETURN



4 Press Δ+ or ∇– to make the adjustment.

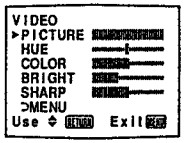






Press RETURN.
The new setting appears in the VIDEO menu.

RETURN



To adjust other items
Repeat steps 3–4.

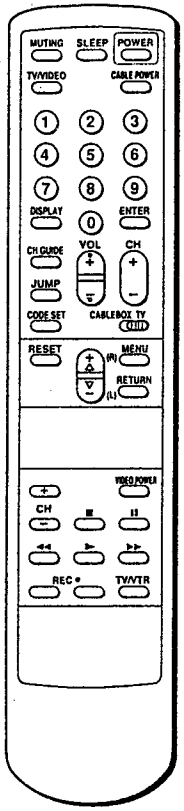
	Press ∇– to:	Press Δ+ to:
PICTURE	decrease picture contrast with soft color	increase picture contrast with vivid color
HUE	make skin tones become purplish	make skin tones become greenish
COLOR	decrease color intensity	increase color intensity
BRIGHTNESS	darken the picture	brighten the picture
SHARPNESS	soften the picture	sharpen the picture

The menus and adjustment bars will disappear automatically after 90 seconds if you do not press any other buttons during that time.

To restore the factory (mid-level) setting
Go to the VIDEO menu and press RESET. All the settings except for PICTURE will be restored to the mid-level setting.

To return to the normal screen
Press MENU.

— 16 —

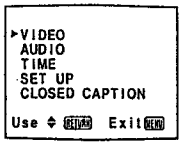


RM-Y117

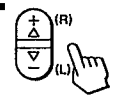
Adjusting the Sound (except for CKV-20DST1)

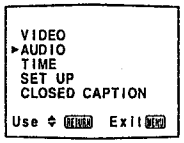
1 Press MENU.
The main menu appears.

MENU



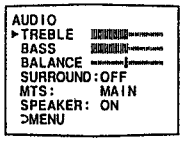
2 Press △+ or ▽– to select AUDIO.



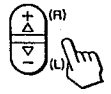


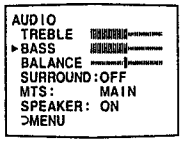
Press RETURN.
The AUDIO menu appears.

RETURN



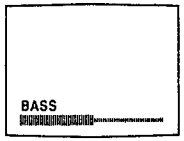
3 Press △+ or ▽– to select the sound quality (TREBLE, BASS or BALANCE) that you want to adjust. For example, to adjust the bass response, select BASS.





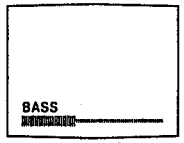
Press RETURN.
The adjustment bar appears.

RETURN



4 Press △+ or ▽– to make the adjustment.

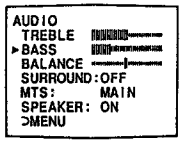
To increase bass response



To decrease bass response

Press RETURN.
The new setting will appear in the AUDIO menu.

RETURN



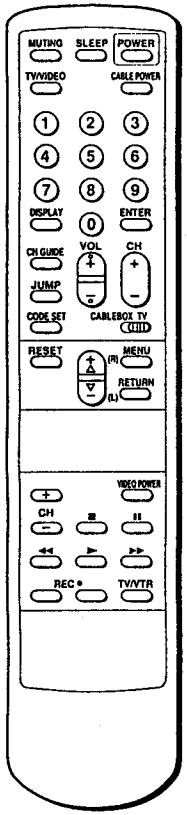
To adjust other items
Repeat steps 3–4.

	Press ▽– to:	Press △+ to:
TREBLE	decrease the treble response	increase the treble response
BASS	decrease the bass response	increase the bass response
BALANCE	emphasize the left speaker's volume	emphasize the right speaker's volume

The menus and adjustment bars will disappear automatically after 90 seconds if you do not press any buttons during that time.

To restore the factory (mid-level) settings
Go to the AUDIO menu and press RESET. The settings for MTS and SPEAKER will not be affected (pp. 34–35).

To return to the normal screen
Press MENU.

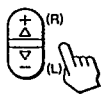


RM-Y117

Receiving Multichannel TV Sound programs—MTS

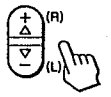
1-2 (Follow steps 1–2 in "Adjusting the Sound," p. 32.)

3 Press Δ+ or ∇– to select MTS.
Then press RETURN.

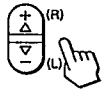


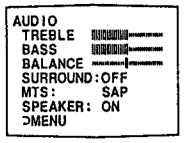
4 Press Δ+ or ∇– to select MAIN, SAP or MONO modes alternately.

Select the MAIN mode to listen to STEREO sound.
The STEREO indicator on the monitor will light up whenever a stereo broadcast is received.



Select the SAP mode to listen to Second Audio Programs.

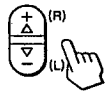


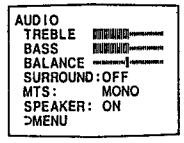


Note

During SAP mode, the sound of non-SAP programs will be muted.

Select the MONO mode to eliminate excessive noise during stereo broadcasts, caused by a weak signal.





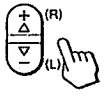
5 Press RETURN.
The mode is selected.

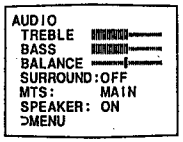
Listening to surround sound—SURROUND

SURROUND gives sound reproduction with the atmosphere of a movie theater or a concert hall.

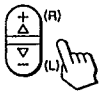
1-2 (Follow steps 1–2 in "Adjusting the Sound," p. 32.)

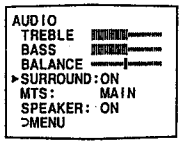
3 Press Δ+ or ∇– to select SURROUND.
Then press RETURN.





4 Press Δ+ or ∇– to select ON or OFF modes alternately.
Then press RETURN.

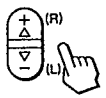


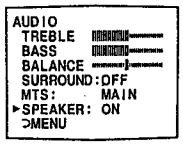


Turning the speaker on or off

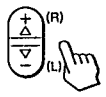
1-2 (Follow steps 1–2 in "Adjusting the Sound," p. 32.)

3 Press Δ+ or ∇– to select SPEAKER.
Then press RETURN.



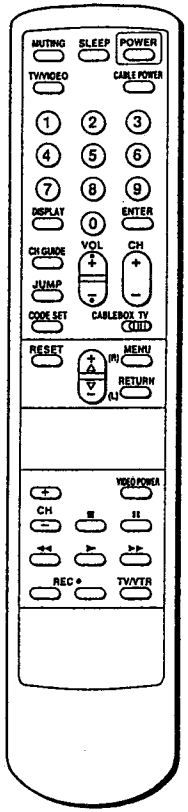


4 Press Δ+ or ∇– to select ON or OFF modes alternately.
Then press RETURN.



To return to the normal screen
Press MENU.

1-11. USING THE TIMER-ACTIVATED FUNCTIONS



RM-Y117

Setting the Clock — CURRENT TIME SET

Follow these instructions to set the current time. The correct time must be set in order to use the timer-activated functions (ON/OFF TIMER, CHANNEL BLOCK).

EXAMPLE: Set the time to 3:15 PM, Monday.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press △+ or ▽– to select TIME.

(R) (L)

```
 VIDEO
 AUDIO
▸TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

Press RETURN.
The TIME menu appears, and the cursor points to "CURRENT TIME SET".

RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 ⊃MENU

___ --:-- AM
Use ≑ RETURN Exit MENU
```

3 Press RETURN.
The CURRENT TIME SET screen appears.

RETURN

```
CURRENT TIME SET
▸___ --:-- AM
 ⊃MENU

Use ≑ RETURN Exit MENU
```

4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

```
CURRENT TIME SET
  SUN 12:00 AM
 ⊃MENU

Set the day.
Use ≑ RETURN Exit MENU
```

5 Press △+ or ▽– to set the day.
Each time you press △+ or ▽–, the day changes consecutively.

(R) (L)

Press RETURN.
"Set the time." appears on the screen.

RETURN

```
CURRENT TIME SET
  MON 12:00 AM
 ⊃MENU

Set the time.
Use ≑ RETURN Exit MENU
```

6 Press △+ or ▽– to set the hour.
Each time you press △+ or ▽–, the hour changes starting with "12:00 AM."

(R) (L)

Press RETURN.

RETURN

```
CURRENT TIME SET
  MON  3:00 PM
 ⊃MENU

Set the time.
Use ≑ RETURN Exit MENU
```

7 Press △+ or ▽– to set the minutes.
Each time you press △+ or ▽–, the minutes change in sequence.

(R) (L)

```
CURRENT TIME SET
  MON  3:15 PM
 ⊃MENU

Set the time.
Use ≑ RETURN Exit MENU
```

Press RETURN.
The setting is completed, and the clock starts.

RETURN

```
CURRENT TIME SET
▸ MON  3:15 PM
 ⊃MENU

Use ≑ RETURN Exit MENU
```

To reset the time
Press RESET while in the CURRENT TIME screen, and repeat steps 4–7.

To display the time
Press DISPLAY.

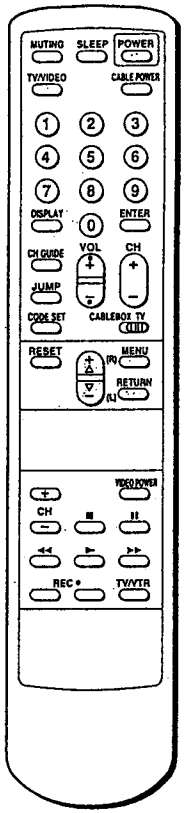
To return to the normal screen
Press MENU.

Notes

- The internal clock of this monitor operates on a 12-hour cycle. If a 24-hour cycle number (for instance, 13:00) is entered, it will be cleared when you press RETURN.

  12:00 AM stands for midnight.
  12:00 PM stands for noon.

- All the settings including CURRENT TIME SET will be erased if you unplug the monitor or a power failure occurs. Reset the current time by following steps 1–7.



RM-Y117

Setting the ON/OFF TIMER

With this function you can set your favorite program to appear on the screen at the time that you set.

EXAMPLE: Set the timer to turn on the monitor every Monday through Friday at 3:15 PM for 2 hours, on channel 21.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press Δ+ or ∇– to select TIME.
Then press RETURN.
The TIME menu appears.

(R) (L) RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 >MENU

 MON  3:15 PM
Use ≑ RETURN Exit MENU
```

3 Press Δ+ or ∇– to select ON/OFF TIMER.
Then press RETURN.
The ON/OFF TIMER screen appears.

(R) (L) RETURN

```
ON/OFF TIMER
▸EVERY SUN-SAT
 12:00AM –h CH---
 >MENU

Use ≑ RETURN Exit MENU
```

Note

If the ON/OFF TIMER display appears in black, the current time has not been set and you cannot select ON/OFF TIMER. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 36–37.

4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

```
ON/OFF TIMER
 EVERY SUN-SAT
 12:00AM –h CH---
 >MENU

Set the day.
Use ≑ RETURN Exit MENU
```

5 Press Δ+ or ∇– to set the day.
Each time you press Δ+ or ∇–, the days of the week change as shown in Fig. 1.
Then press RETURN.
"Set the time." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 12:00AM –h CH---
 >MENU

Set the time.
Use ≑ RETURN Exit MENU
```

6 Press Δ+ or ∇– to set the hour that you want the TIMER to start.
Each time you press Δ+ or ∇–, the hour changes in sequence.
Then press RETURN.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 3:00PM –h CH---
 >MENU

Set the time.
Use ≑ RETURN Exit MENU
```

7 Press Δ+ or ∇– to set the minutes.
Each time you press Δ+ or ∇–, the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM –h CH---
 >MENU

Set the duration.
Use ≑ RETURN Exit MENU
```

8 Press Δ+ or ∇– to set the duration of time.
Each time you press Δ+ or ∇–, the duration changes from "1" to "6" in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM 2h CH---
 >MENU

Select the channel
Use ≑ RETURN Exit MENU
```

9 Press Δ+ or ∇– to set the channel that you want the TV to tune in.
Each time you press Δ+ or ∇–, the channel number changes from 1 to 125 in sequence.

(R) (L)

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM 2h CH 21
 >MENU

Select the channel
Use ≑ RETURN Exit MENU
```

Press RETURN.
The setting is completed, and the TIMER indicator on the front of the monitor lights up.

RETURN

```
ON/OFF TIMER
▸EVERY MON-FRI
 3:15PM 2h CH 21
 >MENU

Use ≑ RETURN Exit MENU
```

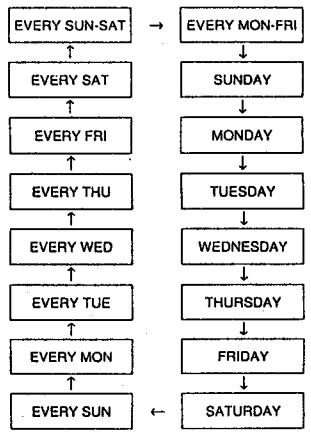
To clear the ON/OFF TIMER setting
Press RESET while in the ON/OFF TIMER screen.

To return to the normal screen
Press MENU.

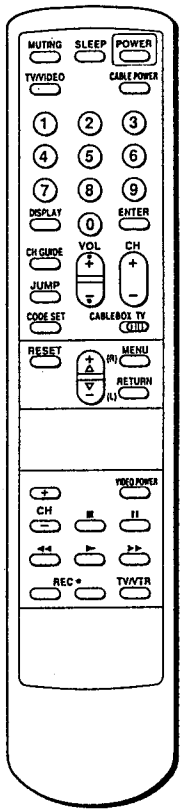
Notes

- While the TIMER is set, the TIMER indicator on the monitor is on.
- One minute before the timer goes off, the "TV will turn off" display will appear on the screen.
- All the settings including ON/OFF TIMER will be erased if you unplug the monitor or a power failure occurs. Reset the ON/OFF TIMER by following steps 1-9.
- If you have not set the clock correctly, the ON/OFF TIMER will not operate at the proper time. To set the clock, see "Setting the Clock–CURRENT TIME SET", pp. 36–37.

Fig. 1
Selecting the day(s) of the week
When you press Δ+, the days of the week appear in the following order.



(∇–: reverse order)



RM-Y117

Setting CHANNEL BLOCK

Use this function to block a channel from appearing on the screen during the time you specify. You can use this function to prevent children from watching undesirable programs.

EXAMPLE: Set CHANNEL BLOCK every Sunday at 8:45 PM for one hour, on channel 38.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

2 Press Δ+ or ∇– to select TIME.
Then press RETURN.
The TIME menu appears.

(R) (L) RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 ↻MENU

 MON  3:15 PM
Use ≑ RETURN  Exit MENU
```

3 Press Δ+ or ∇– to select CHANNEL BLOCK.
Then press RETURN.
The CHANNEL BLOCK screen appears.

(R) (L) RETURN

```
CHANNEL BLOCK
▸EVERY SUN-SAT
 12:00AM _h CH___
 ↻MENU

Use ≑ RETURN  Exit MENU
```

Note

If the CHANNEL BLOCK display appears in black, the current time has not been set and you cannot select CHANNEL BLOCK. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 36–37.

4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

```
CHANNEL BLOCK
 EVERY SUN-SAT
 12:00AM _h CH___
 ↻MENU

Set the day.
Use ≑ RETURN  Exit MENU
```

5 Press Δ+ or ∇– to set the day.
Each time you press Δ+ or ∇–, the days of the week change as shown in Fig. 1.(See p. 39.)
Then press RETURN.
"Set the time." appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK
 SUNDAY
 12:00AM _h CH___
 ↻MENU

Set the time.
Use ≑ RETURN  Exit MENU
```

6 Press Δ+ or ∇– to set the hour.
Each time you press Δ+ or ∇–, the hour changes in sequence.
Then press RETURN.

(R) (L) RETURN

```
CHANNEL BLOCK
 SUNDAY
 8:00PM _h CH___
 ↻MENU

Set the time.
Use ≑ RETURN  Exit MENU
```

7 Press Δ+ or ∇– to set the minutes.
Each time you press Δ+ or ∇–, the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK
 SUNDAY
 8:45PM _h CH___
 ↻MENU

Set the duration.
Use ≑ RETURN  Exit MENU
```

8 Press Δ+ or ∇– to set the duration of time that you want the monitor remain blocked.
Each time you press Δ+ or ∇–, the duration changes from 1 to 6 in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK
 SUNDAY
 8:45PM 1h CH___
 ↻MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

9 Press Δ+ or ∇– to set the channel that you want to block.
Each time you press Δ+ or ∇–, the channel number changes from 1 to 125 in sequence.

(R) (L)

```
CHANNEL BLOCK
 SUNDAY
 8:45PM 1h CH 38
 ↻MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

Press RETURN.
The setting is completed.

RETURN

```
CHANNEL BLOCK
▸SUNDAY
 8:45PM 1h CH 38
 ↻MENU

Use ≑ RETURN  Exit MENU
```

If you select a channel which has been blocked, the message of "BLOCKED" appears.

```
                38

BLOCKED
```

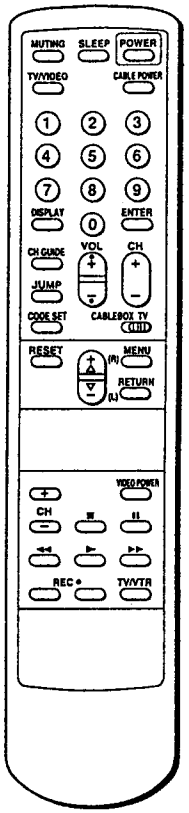
To clear the BLOCK setting
Press RESET while in the CHANNEL BLOCK screen.

To return to the normal screen
Press MENU.

Notes

- If you set a new CHANNEL BLOCK by following steps 1–9, the original setting will be erased.
- If you have not set the clock correctly, CHANNEL BLOCK will not operate at the proper time. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 36–37.

1-12. CUSTOMIZING THE SCREEN DISPLAY



RM-Y117

Setting Channel Captions — CH CAPTION

Use this feature to caption up to 12 channel number displays with the matching channel call letters.

EXAMPLE: Caption channel 20 with ESPN at the caption position number 4.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

2 Press Δ+ or ∇– to select SET UP.
Then press RETURN.
The SET UP menu appears.

(R) (L) RETURN

```
SET UP
▸CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 ↄMENU
```

3 Press Δ+ or ∇– to select CH CAPTION/GUIDE.
Then press RETURN.
The CH CAPTION/GUIDE screen appears.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③  ▸ ---
④ ⑤ ⑥    -----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Use ≑ RETURN  Exit MENU
```

Note

If the CH CAPTION display appears in black, the monitor is in video mode and you cannot select CH CAPTION/GUIDE. Press TV/VIDEO to change to TV mode.

4 Press RETURN again.
"Select a position." appears on the screen.

RETURN

```
CH CAPTION/GUIDE
① ② ③    ---
④ ⑤ ⑥    -----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Select a position.
Use ≑ RETURN  Exit MENU
```

5 Press Δ+ or ∇– to select a caption position number.
Each time you press Δ+ or ∇–, the caption position number is marked in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③    ---
④ ⑤ ⑥    -----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Select the channel
Use ≑ RETURN  Exit MENU
```

6 Press Δ+ or ∇– to select the channel you want to caption.
Each time you press Δ+ or ∇–, the channel number changes from 1 to 125.
Then press RETURN.
"Select the letter." appears on the screen.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    -----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Select the letter.
Use ≑ RETURN  Exit MENU
```

7 Press Δ+ or ∇– to select the first letter.
Each time you press Δ+ or ∇–, "0–9", "A-Z", "&", "!", "–" and "_(blank space)" appear in sequence.
Then press RETURN.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    E----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Select the letter.
Use ≑ RETURN  Exit MENU
```

8 Repeat step 7 to select each remaining letter.
(For a 3-letter caption, leave a space by pressing RETURN only.)

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    ESPN
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Select the letter.
Use ≑ RETURN  Exit MENU
```

9 Press RETURN.
The setting is completed.

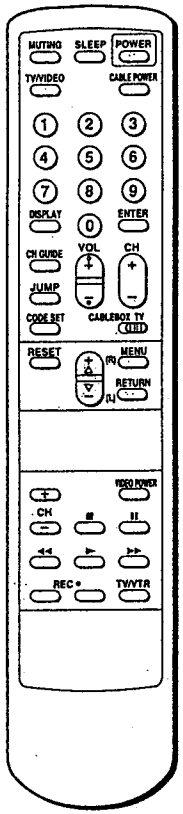
RETURN

```
CH CAPTION/GUIDE
① ② ③  ▸ ---
④ ⑤ ⑥    -----
⑦ ⑧ ⑨  ↄ
DISP ⓪ ENT
Use ≑ RETURN  Exit MENU
```

To caption other channels
Repeat steps 4–9.

To erase unneeded captions
Call the caption setting screen by following steps 1–5, and press RESET.

To return to the normal screen
Press MENU.



RM-Y117

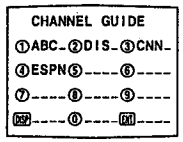
Viewing the Captioned Channels — CH GUIDE

Use this feature to display the captions you set, and to select a channel directory for viewing.

1 Press CH GUIDE.

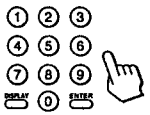
A directory appears, corresponding to the directory keys on the Remote Commander.

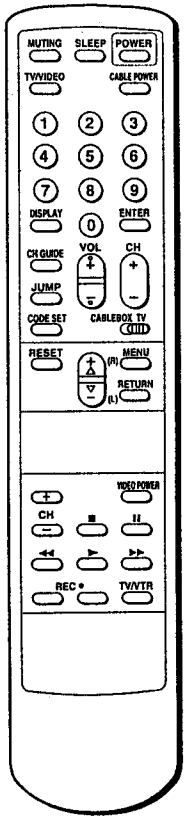
CH GUIDE



To cancel the CHANNEL GUIDE screen
Press CH GUIDE again.

2 Press the directory key of the channel you want to watch.





RM-Y117

Setting VIDEO LABEL (CKV-20HX1 only)

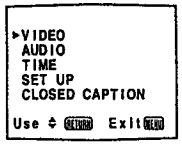
Use this feature to label each input mode in order to identify the equipment connected to each input terminal.

EXAMPLE: Label VIDEO 1 IN as VHS.

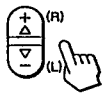
1 Press MENU.

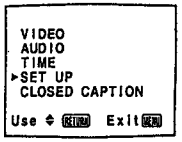
The main menu appears.

MENU



2 Press Δ+ or ∇– to select SET UP.

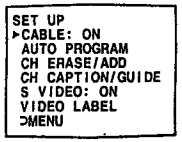




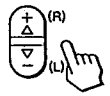
Press RETURN.

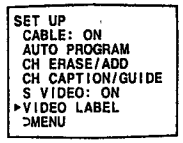
The SET UP menu appears.

RETURN



3 Press Δ+ or ∇– to select VIDEO LABEL.

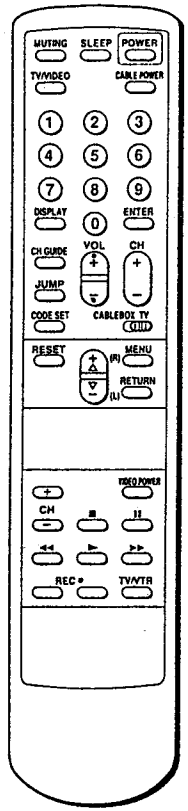




Press RETURN.

The VIDEO LABEL screen appears.

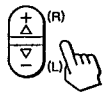
RETURN



RM-Y117

To return to the normal screen
Press MENU.

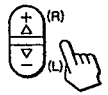
4 Press △+ or ▽– to select the input mode you want to label.




```
VIDEO LABEL
►VIDEO1: VIDEO1
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

Press RETURN.

5 Press △+ or ▽– to select VHS.




```
VIDEO LABEL
 VIDEO1: VIDEO1
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

Each time you press △+, the label changes:

VIDEO 1
VIDEO 1 → S VIDEO → BETA → 8 mm → VHS → LD

VIDEO 2
VIDEO 2 → BETA → 8 mm → VHS → LD

VIDEO 3
VIDEO 3 → BETA → 8 mm → VHS → LD

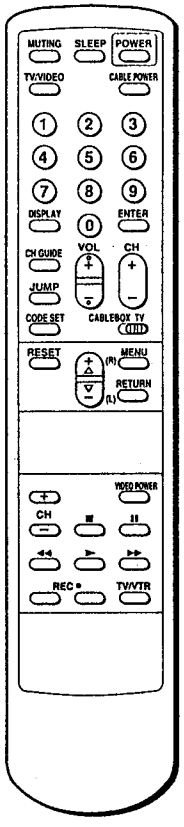
(▽–: reverse order)

Press RETURN.

```
VIDEO LABEL
►VIDEO1: VHS
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

To label other input modes
Repeat steps 4–5.

1-13. USING THE PRE-PROGRAMMED REMOTE COMMANDER (CKV-20HX1 only)



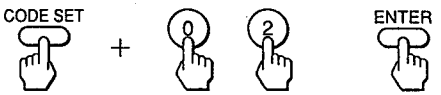
RM-Y117

You can operate your video equipment and cable converter box that has an infrared remote detector with this supplied pre-programmed Remote Commander.

Operating Sony or Non-Sony Video Equipment—Pre-Programmed Function

With the supplied Remote Commander, you can operate a Sony video cassette recorder (Beta, 8 mm, VHS) or a multi disc player as well as most non-Sony video equipment connected to your monitor by following the steps below.

1 While pressing CODE SET, press 0 - 9 to enter the manufacturer's code number (see chart on p. 48). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.



2 Use the video operating buttons on the Remote Commander to operate the video equipment.

Operating a VCR

To turn on or off	Press VIDEO POWER.
To change channels (when watching TV programs through the VCR's tuner)	Press CH +/–.
To record	Press ● (2 buttons simultaneously).
To play	Press ▶.
To stop	Press ■.
To fast forward	Press ▶▶.
To rewind the tape	Press ◀◀.
To pause	Press II.
To search the picture forward and backward	Press ▶▶ or ◀◀ during playback.

Operating a Video Disc Player

To play	Press ▶.
To stop	Press ■.
To pause	Press II. *To resume normal playback, press again.* *This function is effective only for CAV (standard-play disc). With CLV (extended-play disc), the monitor will go into the standby mode if II is pressed.
To search the picture forward and backward	Keep pressing ▶▶ or ◀◀ during playback. *To resume normal playback, release the button.*

Manufactures and Code Numbers (VCR/video disc player)

Manufacturer	Code number
SONY	01, 02, 03, 04
CANON	05
EMERSON	22, 30, 33
FISHER	10, 11, 12, 15
FUNAI	29
GENERAL ELECTRIC	05, 08
GOLDSTAR	25
HITACHI	07, 08
JVC	16
MAGNAVOX	05, 06, 09
MITSUBISHI	18, 19, 26, 27
MULTITECH	29
NEC	16, 23, 31
PANASONIC	05, 06
PHILCO	05, 06
PHILIPS	05, 06, 09
QUASAR	05, 06
RCA	07, 08
SAMSUNG	24, 32
SANYO	11, 15
SCOTT	21
SHARP	13, 14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	29
TEKNIKA	28, 29
TOSHIBA	20, 21
TOTE VISION	25
ZENITH	17

The code numbers for Sony equipment are assigned as follows:

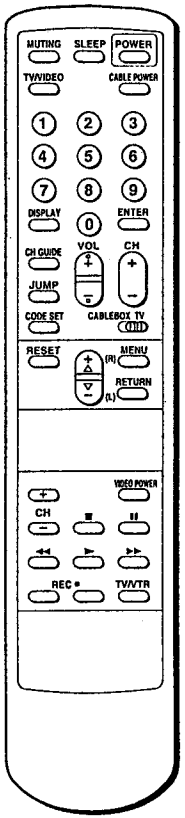
01 ..... Beta, ED Beta VCR
02 ..... 8 mm VCR
03 ..... VHS VCR
04 ..... Video disc player

Notes

- If more than one code number is listed for manufacturers other than Sony, try entering them one by one, until you come to the correct code for your equipment.
- If the video equipment does not have a certain function, the corresponding button on this Remote Commander will not operate.
- In some rare cases, you may not be able to operate your non-Sony video equipment with the supplied Remote Commander. This is because your equipment may use a code that is not provided with this Remote Commander. In this case, please use the equipment's own remote control unit.

CAUTION

When you remove the batteries from the Remote Commander, all the settings will revert to the Sony Beta setting. Reset the codes by following the steps on p. 47.



RM-Y117

Manufactures and Code Numbers (cable box)

Manufacturer	Code number
JERROLD	60, 61, 62, 63, 64, 65
PIONEER	69, 70
SCIENTIFIC ATLANTA	66, 67
TOCOM	71, 72
ZENITH	68

Operating a Cable Converter Box

Follow these instructions to set the manufacturer's code which will enable you to operate a connected cable converter box with the pre-programmed Remote Commander.

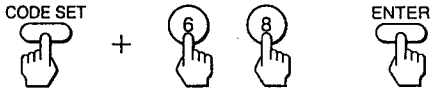
EXAMPLE: Operate a connected Zenith cable converter box.

1 Set the CABLEBOX-TV selector to CABLEBOX.

Notes

- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this Remote Commander and you may not be able to operate your cable converter box with the supplied Remote Commander. In this case, use the equipment's own remote control unit.

2 While pressing CODE SET, press 6 and 8 (Zenith's code number -see chart below) and ENTER.

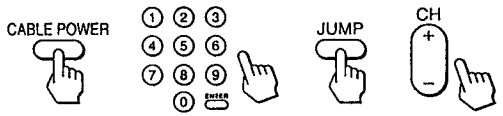


A long beep sounds, indicating that the code has been set.

Note

If you press a wrong code or if the code has not been set, four short beeps sound. Repeat step 2 to set the code.

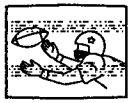
3 Use CABLE POWER and the TV control buttons (0 – 9, ENTER, JUMP and CH +/–) to operate the cable converter box.



To operate the monitor
Set the CABLEBOX-TV selector to TV, then use the TV control buttons to control the monitor.

For more details on operating the cable box
Refer to the operating instructions that come with the cable box.

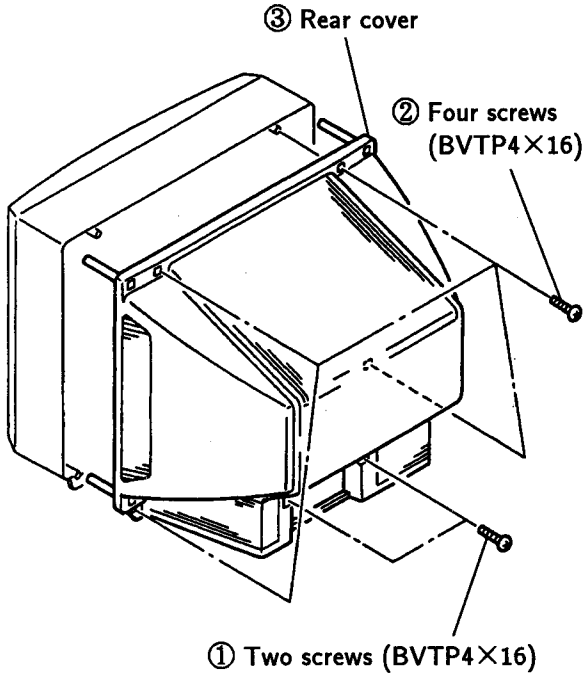
1-14. TROUBLESHOOTING

Symptom	Possible causes and remedies
Poor or no picture (screen not lit), good sound	• Adjust PICTURE. • Adjust BRIGHTNESS. • Check antenna/cable connections.
Good picture, no sound	• Press VOLUME + on the TV or VOL + on the Remote Commander. • Press MUTING on the Remote Commander. • Check that the MTS setting is set correctly. • Check that the TV/VIDEO button is set correctly. • Check that SPEAKER is set to ON.
No picture (screen not lit), no sound	• Is POWER switched on ? • Check the power cord connection. • Check that the TV/VIDEO button is set correctly. • Check that S VIDEO is set to ON.
No color	• Is it a color program ? • Adjust COLOR.
Snow and noise only	• Is it an active or the correct channel ? • Check the CABLE setting. • Check antenna/cable connections.
 Dotted lines or stripes	This is often caused by local interference. (e.g. cars, neon signs, hairdryers etc.) Adjust the antenna for minimum interference.
Double images or ghosts	Reflections from nearby mountains or buildings often cause this problem. A highly directional outdoor antenna or a CATV cable may improve the picture.
Try another channel. It could be station trouble.	

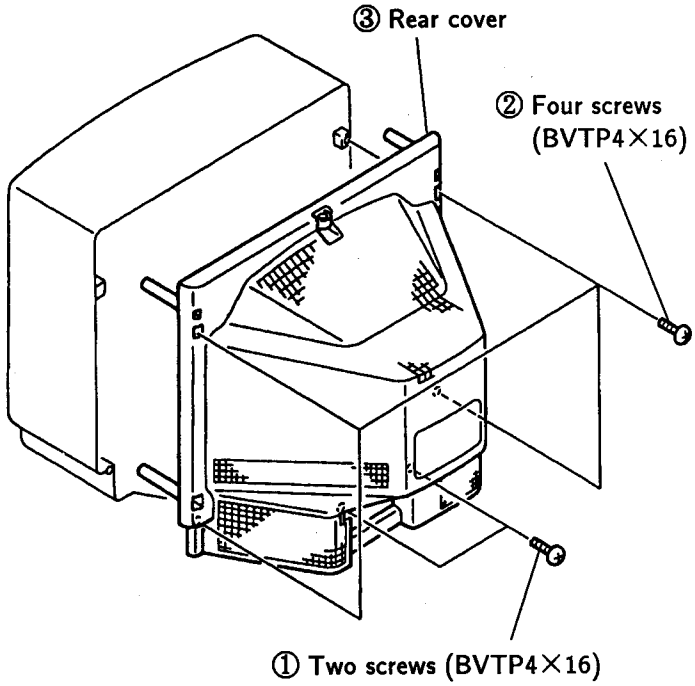
If the problem persists, contact your nearest service facility.

SECTION 2
DISASSEMBLY

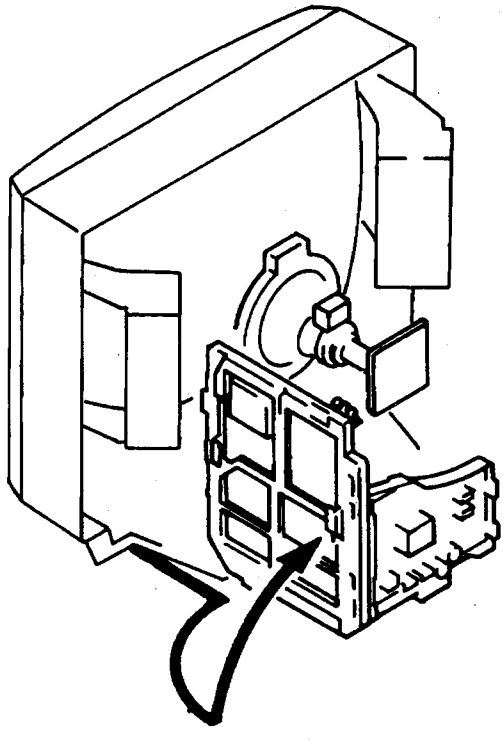
2-1-1. REAR COVER REMOVAL (CKV-20HX1)



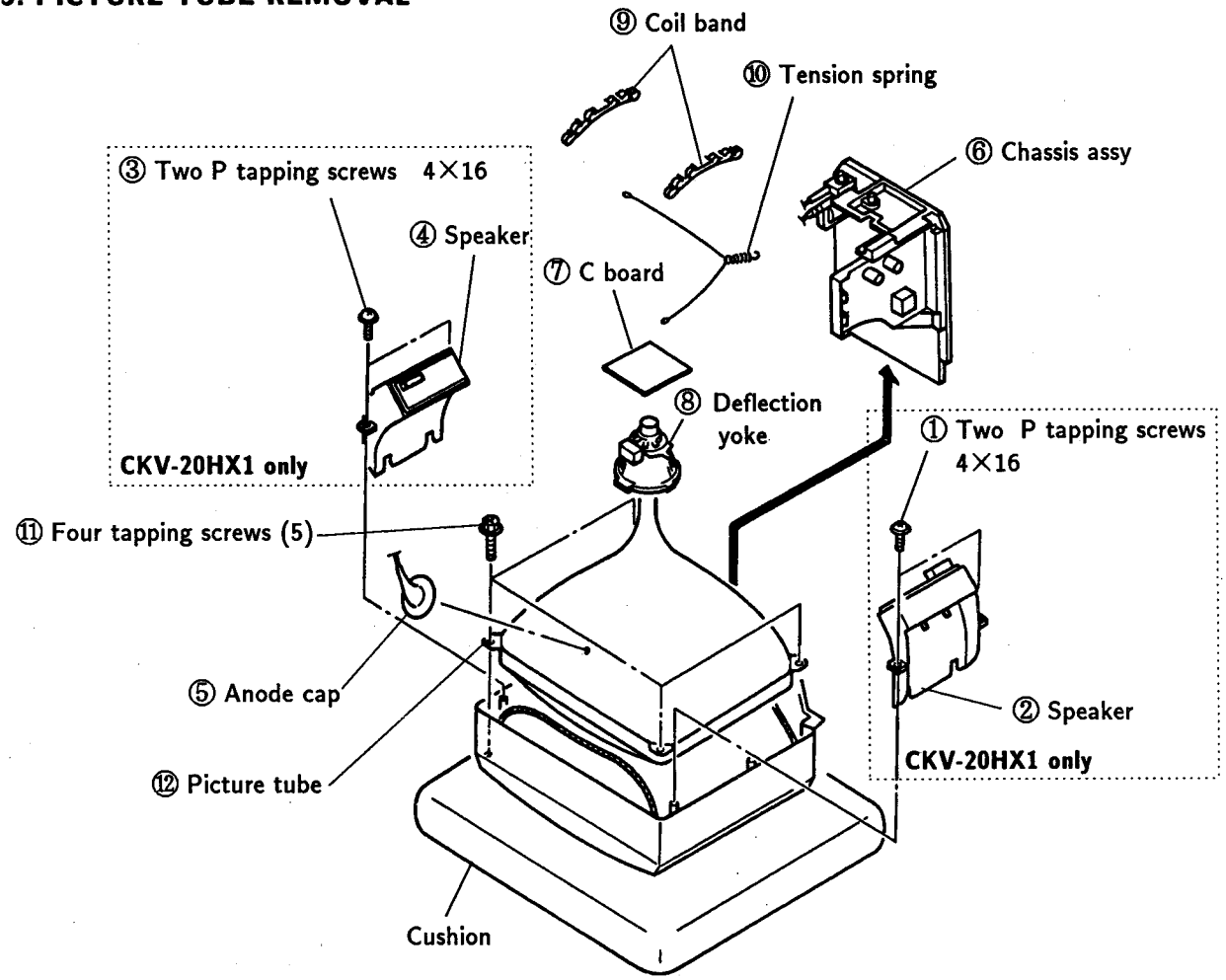
2-1-2. REAR COVER REMOVAL (CKV-20DST1)



2-2. SERVICE POSITION



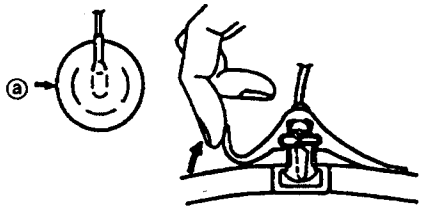
2-3. PICTURE TUBE REMOVAL



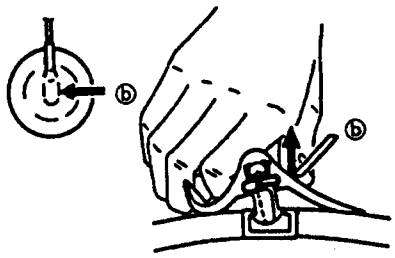
· REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

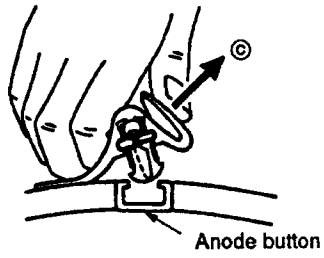
· REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



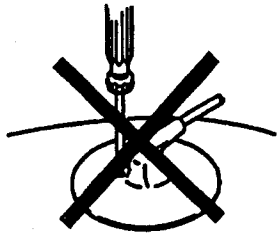
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

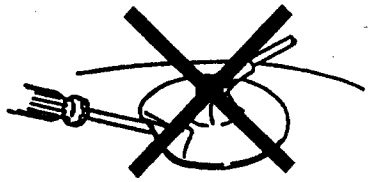
· HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

● The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
● These adjustments should be performed with rated power supply voltage unless otherwise noted.

The controls and switch should be set as follows unless otherwise noted :

PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G 2) and White Balance

Note: Test Equipment Required.

1. Color bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter

Preparation:

● Feed in the white pattern signal.
● Before starting, degauss the entire screen.

3-1. BEAM LANDING

1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Fig.2
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are at the sides evenly. (Fig.3)
5. Move the deflection yoke forward, and adjust so that the entire screen becomes green. (Fig.1)
6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. When landing at the corner is not right, adjust by using the disk magnets. (Fig.4)

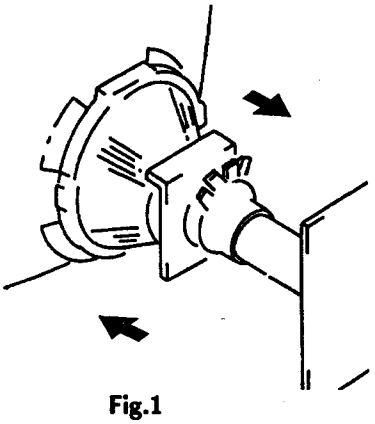


Fig.1

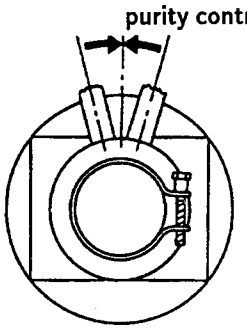


Fig.2

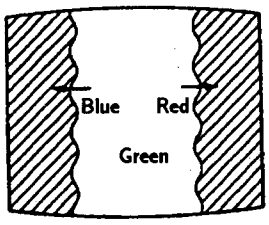


Fig.3

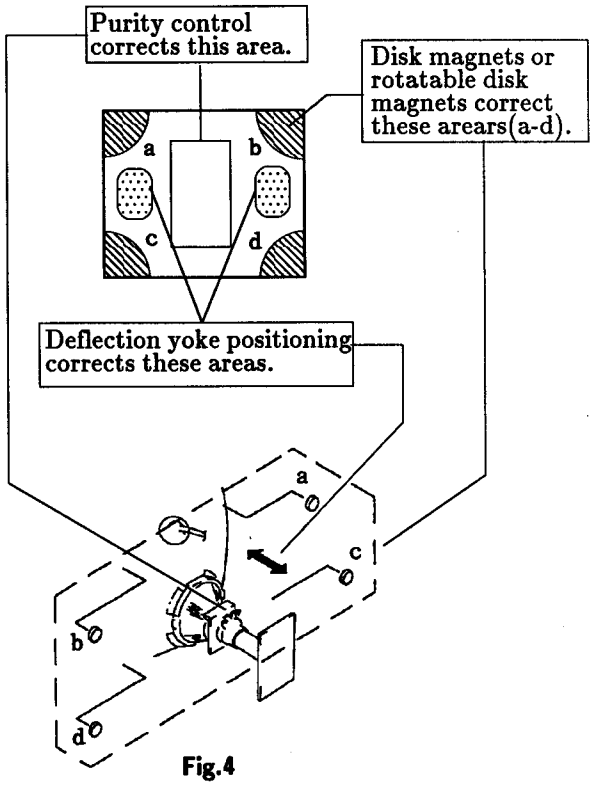


Fig.4

3-2. CONVERGENCE

Preparation:

- Before starting, perform FOCUS, H.SIZE, V.LIN and V.SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in dot pattern.

(1) Horizontal and Vertical Static Convergence

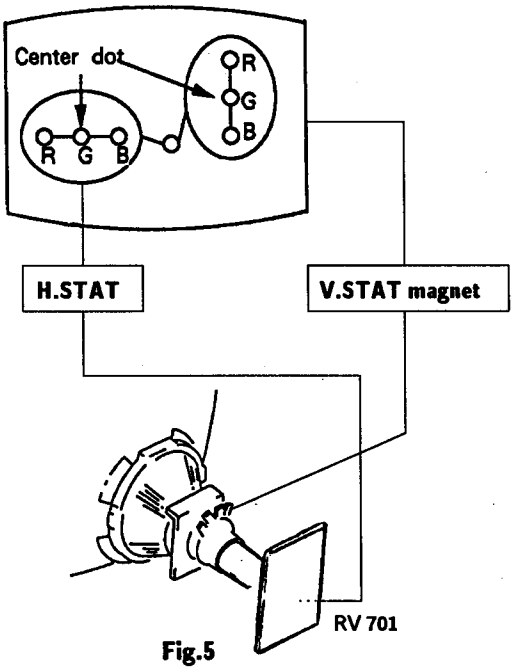
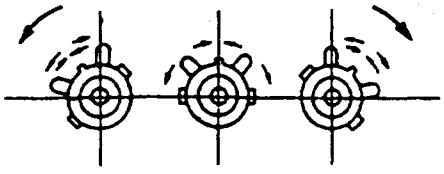


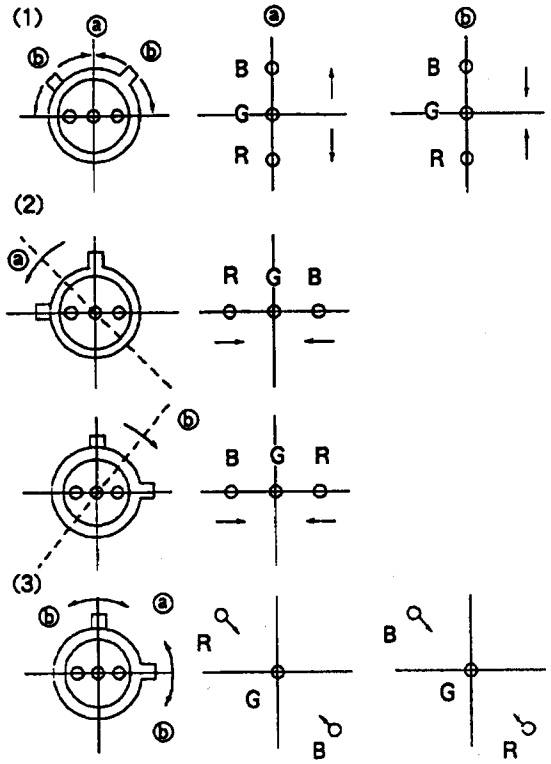
Fig.5

1. Adjust H.STAT VR to converge red, green and blue dots the in center of the screen.(Horizontal movement)
2. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement)
3. If the red, green and blue dots do not converge on the center of screen with H.STAT VR, perform horizontal convergence adjustment using H.STAT VR and V.STAT magnet as shown below. (In this case, H.STAT VR and V.STAT magnet effect each other.)

- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



4.When the V.STAT magnet is moved in the direction of arrow ⓐ and ⓑ, red, green and blue dots move as shown below.



If the blue dot does not converge with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H.static convergence.

Rotate BMC magnet (b) to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.

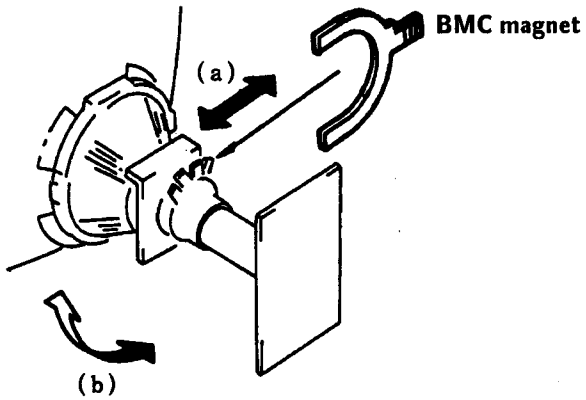


Fig.6

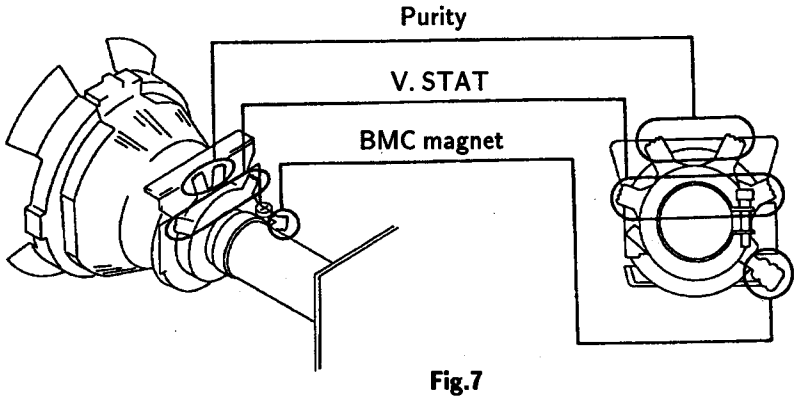


Fig.7

(3) Screen-corner Convergence

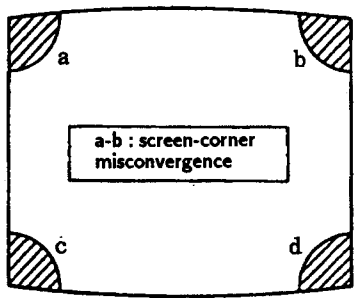


Fig.9

(2)Dynamic Convergence Adjustment

Preparation:

- Before starting perform Horizontal and Vertical static convergence Adjustment.

1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

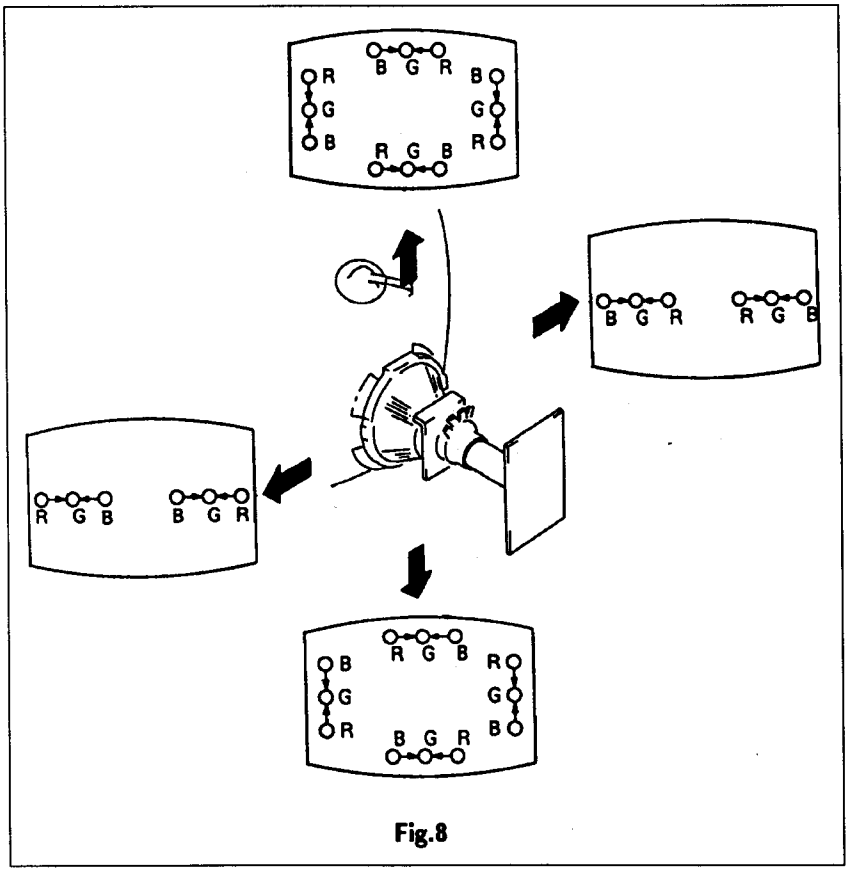
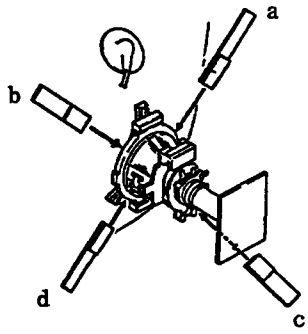


Fig.8

Affix a Permalloy ass'y corresponding to the misconverged areas



Permalloy assembly

3-3. FOCUS

Adjust FOCUS control for best picture.

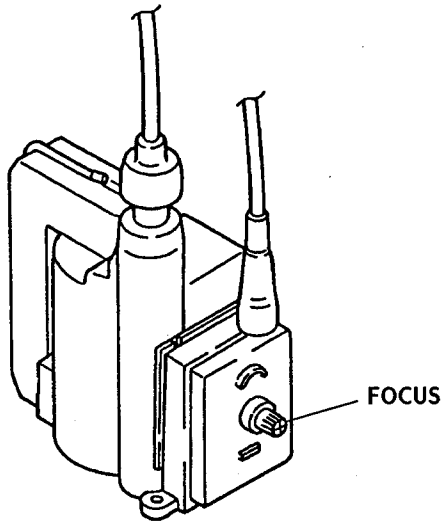


Fig.10

3-4. SCREEN(G 2)

1. Input a dots pattarn.
2. Set the PIC, BRT controls at minimum and COLOR control at normal.
3. Adjust BKG VRs so that voltages on the red, green and blue cathodes are 170 V dc with an oscilloscope as shown in Fig.11.
4. Observe the screen and adjust SCREEN (G 2)RV 702 to obtain the faintly visible background of dot signal.

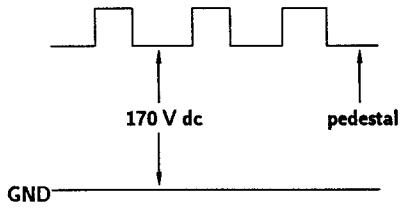


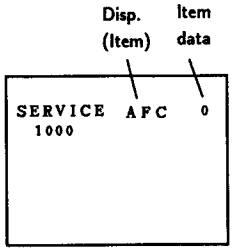
Fig.11

3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

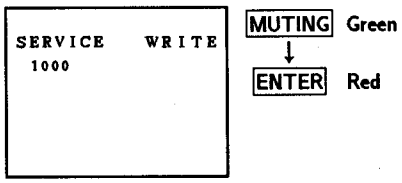
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



7. Turn set off and on to exit.

3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Adjust with SBRT if necessary.
5. Select G CUT and B CUT with 1 and 4.
6. Adjust with 3 and 6 for the best white balance.
7. Set the PICTURE and BRIGHT to maximum.
8. Select GAMP and BAMP with 1 and 4.
9. Adjust with 3 and 6 for the best white balance.
10. Write into the memory by pressing MUTING then ENTER.

SECTION 4
SAFETY RELATED ADJUSTMENTS

A BOARD

⊠ R537 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

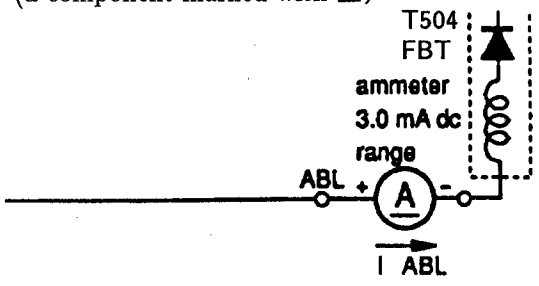
The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC602, D511, C523, C524, R534, R535, R537, R549, R637, PM501, T504, DY

①

1. Preparation before confirmation
   1) Turn the POWER switch ON, and receive entirely white signal and set the PICTURE and BRIGHT controls to maximum.
   2) Confirm that the voltage of the check terminal of TP85 is more than 100VDC when the set is operating normaly with 120.0±2.0VAC supply.

2. Hold-down operation confirmation (HV)
   1) Connect the currentmeter between the 7th pin of FBT (T504)and the land of it with connect polarity.
   2) Receive White Signal and adjust the ABL current to follows with the PICTURE and the BRIGHT controls.
      1450 ± 100μA
   3) Connect the Digital Voltmeter to pin8 of PM501 then read the voltage as A.
   4) Connect the Digital Voltmeter and DC power Supply via 1SS 119 to TP-85.
   5) Increase the DC power voltage gradually until the Picture just blanks out.
   6) Read the digital voltmeter indication.
   7) Turn DC power Source off immediatery.
      STANDARD
      Less or equal to A + 16.5 VDC
   8) Receive Dot Signal and adjust the ABL current to follows, with the PIX and the BRT controls.
      150 ± 100 μA
   9) Repeat steps from (3) to (7).
      STANDARD
      Less or equal to A + 16.5 VDC

3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R537 (a component marked with ⊠).



A BOARD

⊠ R511 CONFIRMATION METHOD (B+ HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC602, C524, R511, R534, R549, R637, PM501

②

1. Hold-Down Operation Voltage (B+)
   1) Connect the currentmeter between the 7th pin of FBT (T504)and the land of it with connect polarity.
   2) Receive White Signal and adjust the ABL current to follows with the PICTURE and the BRIGHT controls.
      1450 ± 100μA
   3) Connect the Digital Voltmeter and DC power Supply via 1SS 119 to pin8 of PM501.
   4) Increase the DC power voltage gradually until the Picture just blanks out.
   5) Read the digital voltmeter indication.
   6) Turn DC power Source off immediatery.
      STANDARD
      Less or equal to 130.0 VDC
   7) Receive Dot Signal and adjust the ABL current to follows, with the PICTURE and the BRIGHT controls.
      150 ± 100 μA
   8) Repeat steps from (4) to (6).
      STANDARD
      Less or equal to 132.5 VDC

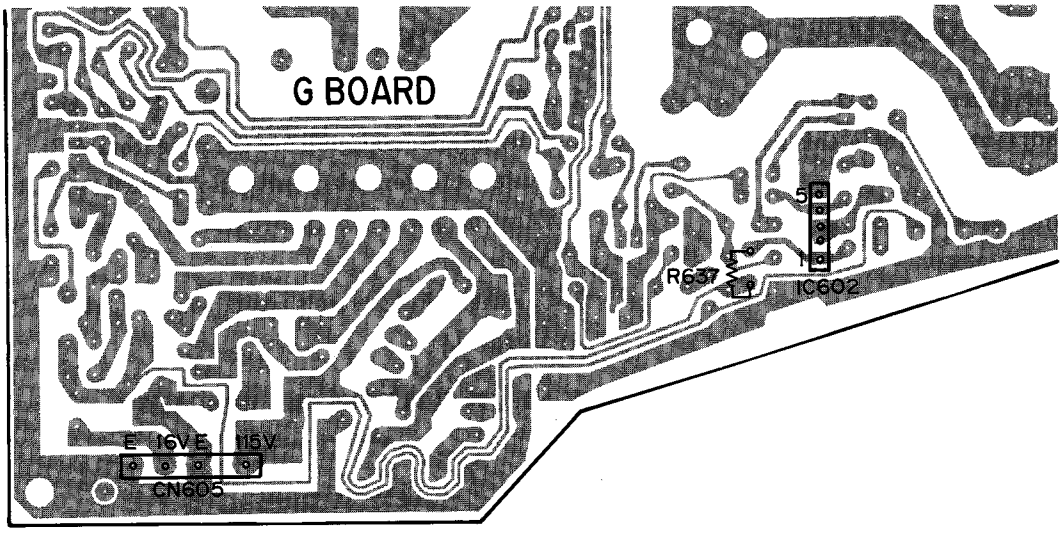
2. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R511 (a component marked with ⊠).

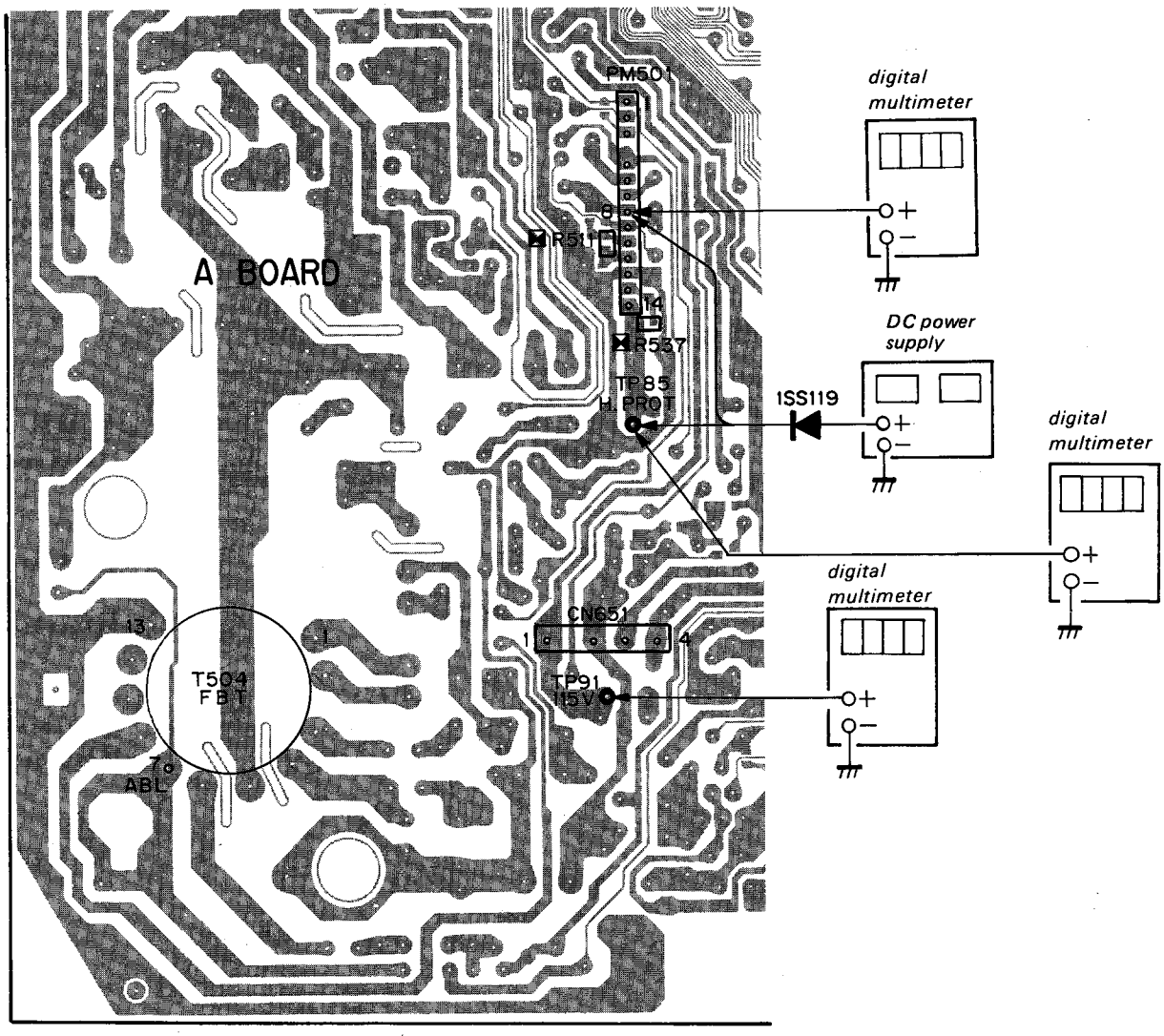
G BOARD

B+ VOLTAGE CONFIRMATION

The following adjustments should always be performed when replacing IC602 or R637.

1) Supply 130±2%V AC to with variable autotransformer.
2) Input an entirely monoscope signal.
3) Set the PICTURE control and the BRIGHT controls in to initial reset.
4) Confirm the voltage of A BOARD ① pin CN651 connecter is less than 116.5V DC.
5) If step 4) is not satisfied, replace IC602 and R637 repeat above steps.


G BOARD
5
1
R637
IC602
E
16V
E
115V
CN605


A BOARD
PM501
8
1
R511
14
1
R537
TP85
H. PROT
ISS119
CN651
13
1
1
4
T504
FBT
7
ABL
TP91
115V
digital
multimeter
DC power
supply
digital
multimeter
digital
multimeter

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

Use of Remote Commander (RM-Y116/Y117) can be performed circuit adjustments about this model.

NOTE : Test Equipment Required.

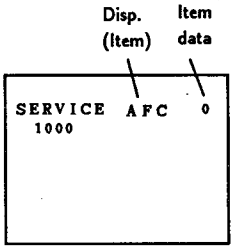
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

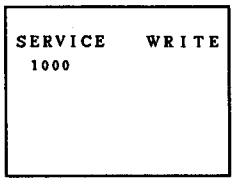
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



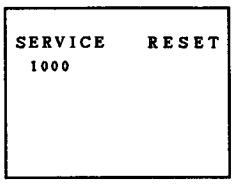
3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



MUTING Green
↓
ENTER Red

7. Press 8 then ENTER on the Remote Commander to initlalize.



Carry out step 7) when adjusting IDs 0 to 4 and when replacing and adjusting IC102.

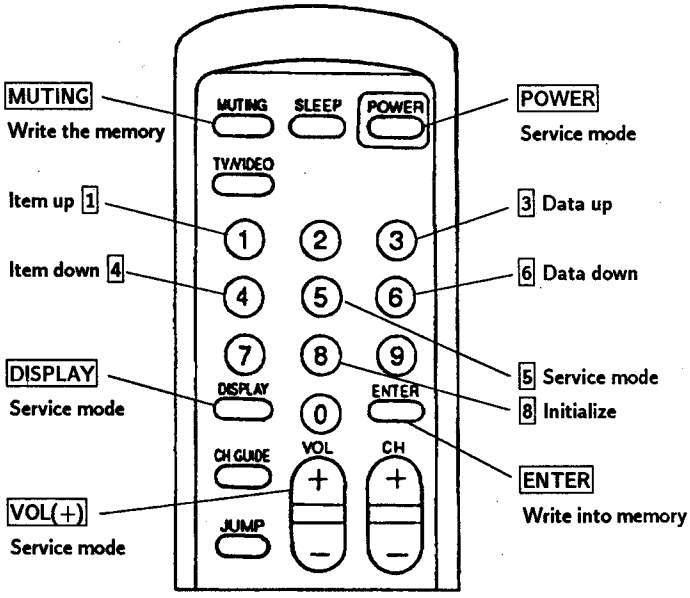
Factory original setting

8. Turn set off and on to exit.

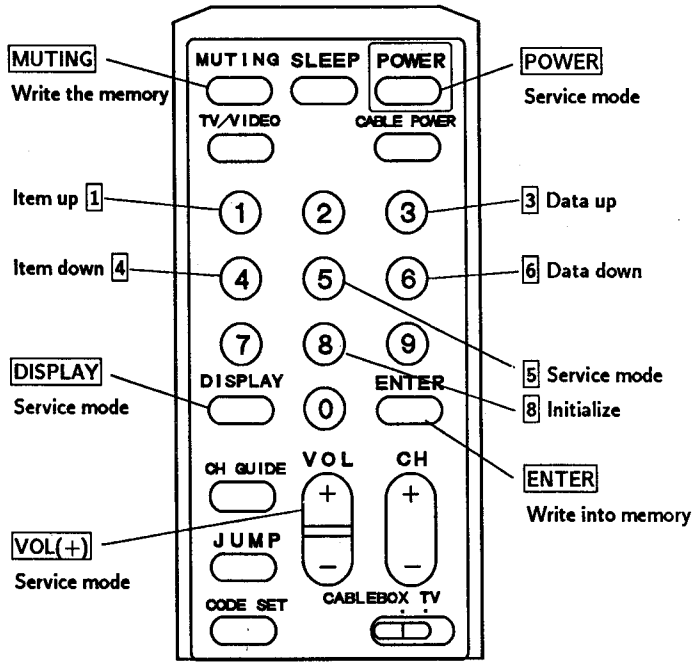
2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again, confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



RM-Y116
(CKV-20DST1)



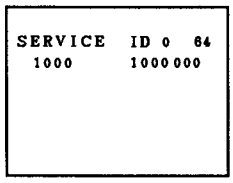
RM-Y117
(CKV-20HX1)

4. AN ITEM OF ADJUSTMENTS

No.	Disp.	Ave. data	Data range	Item
1	AFC	* 0	0~3	AFC Loop Gain
2	HFRE	78	0~127	H. Frequency
3	VFRE	15	0~31	V. Frequency
4	VPOS	20	0~31	V. Center
5	VSIZ	31	0~63	V. Size
6	VLIN	8	0~15	V. Linearity
7	VSCO	6	0~15	V. Correction
8	HPOS	6	0~15	H. Center
9	HSIZ	16	0~31	H. Size
10	PAMP	23	0~31	Pin Amp
11	CPIN	4	0~7	Corner Pin
12	PPHA	7	0~15	Pin Phase
13	VCOM	* 2	0~7	V. Compensation
14	GAMP	21	0~31	Green Amp
15	BAMP	16	0~31	Blue Amp
16	GCUT	6	0~15	Green Cut Off
17	BCUT	7	0~15	Blue Cut Off
18	CROM	26	0~63	Chroma Trap
19	SPIX	32	0~63	Sub Contrast
20	SHUE	25	0~63	Sub Hue
21	SCOL	30	0~63	Sub Color
22	SBRT	34	0~63	Sub Bright
23	RGBP	* 18	0~63	RGB Picture
24	SHAP	* 7	0~15	Sharpness
25	VSMO	* 0	0, 1	V Pull in Range
26	REF	* 2	0~3	Refference line
27	ROFF	1	0, 1	Red Out
28	GOFF	1	0, 1	Green Out
29	BOFF	1	0, 1	Blue Out
30	ABLM	* 0	0, 1	ABL Mode
31	NOTC	* 0	0, 1	Notch On/Off
32	DRGB	* 0	0, 1	OSD intensity
33	VANG	not use	0~63	V. Angle
34	DISP	40	0~63	Display Position
35	SVOL	* 0	0~7	Sub Volume
36	SBAL	not use	0~7	Sub Balance (CKV-20DST 1)
	SBAL	7	0~7	Sub Balance (CKV-20HX1)
37	BASS	not use	0~15	Sub Bass
38	TRE	not use	0~15	Sub Treble
39	UYBO	not use	0~63	Upper Y. Bow
40	LYBO	not use	0~63	Lower Y. Bow
41	HAMP	not use	0~63	H. Amp
42	HTIL	not use	0~63	H. Tilt
43	UCBO	not use	0~63	Upper C. Bow
44	UTIL	not use	0~63	Upper Tilt
45	LCBO	not use	0~63	Lower C. Bow
46	LTIL	not use	0~63	Lower Tilt
47	DCSH	not use	0~63	DC. Shift
48	PHPO	not use	0~127	PinP H Position
49	PHUE	not use	0~63	PinP Hue
50	ID-0	* 64	0~127	CKV-20DST1
	ID-0	* 120	0~127	CKV-20HX1
51	ID-1	* 0	0~127	CKV-20DST1
	ID-1	* 111	0~127	CKV-20HX1
52	ID-2	* 64	0~127	CKV-20DST1
	ID-2	* 72	0~127	CKV-20HX1
53	ID-3	* 0	0~127	Model ID
54	ID-4	* 16	0~127	Model ID

* : Set-up value

Note : No.from 1 to 54 is to show adjustment order.



Please adjust the function values as shown below when IC 102 on A board was replaced.

KV-20DST1 (US)

No.	Disp.	Disp.	Data
50	ID-0	1 0 0 0 0 0 0	64
51	ID-1	0 0 0 0 0 0 0	0
52	ID-2	1 0 0 0 0 0 0	64
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

KV-20HX1 (US)

No.	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 0 1 1 1 1	111
52	ID-2	1 0 0 1 0 0 0	72
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

5-2. A BOARD ADJUSTMENTS

RF AGC ADJUSTMENT(IF BLOCK VR)

1. Input a color-bar signal.
2. Adjust AGC VR of TU 101 so that snow noise and cross-modulation disappear from the picture.
3. Confirm them at every channel.

H.FREQUENCY ADJUSTMENT (HFRE)

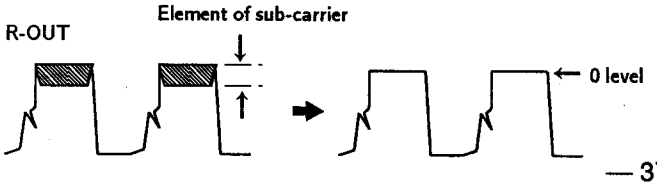
1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Connect a frequency counter to base of Q550 (TP-86 H.DRIVE).
4. Call the item of AFC, set to 3 level (free run).
5. Select HFRE with 1 and 4.
6. Adjust with 3 and 6 for the 15734± 60Hz.
7. Call the item of AFC again, adjust the level" 0 ".
8. Write into the memory by pressing MUTING then ENTER.

V.FREQUENCY ADJUSTMENT (VFRE)

1. Select video 1 with no connecting the signal.
2. Set to Service adjustment Mode.
3. Connect the frequency counter across connector VDY (+) (CN501) connector and ground.
4. Select VFRE with 1 and 4.
5. Adjust with 3 and 6 for the 55 ±0.5Hz.
6. Write the memory by pressing MUTING then ENTER .

CROMA TRAP ADJUSTMENT (CROM)

1. Input a red signal. (CKV-20DST1)
   Connect * " y+c cable"to Y input of S Video. (CKV-20HX1)
   * Must prepare " y+c cable"by connecting C to Y in the middle.
   Note : Set CROM average data at 26 if S-video input is impossible.
2. Set to Service adjustment Mode.
3. Connect an oscilloscope CN703 Pin① (R OUT) of C board ground.
4. Select CROM with 1 and 4.
5. Adjust with 3 and 6 for the 0 level.

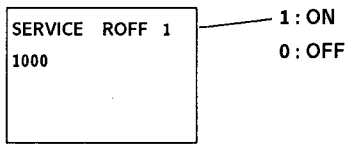


6. Write the memory by pressing MUTING then ENTER .

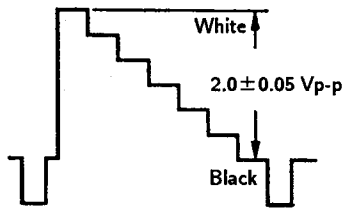
SUB CONTRAST ADJUSTMENT (SPIX)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Set the conditions as follows.

PICTURE	·····	MAX
COLOR	·····	MIN
BRIGHT	·····	MIN
R OFF	·····	ON (1)
G OFF	·····	OFF (0)
B OFF	·····	OFF (0)



4. Connect an oscilloscope to CN703 Pin① (R OUT) of C board and ground.
5. Select SPIX with 1 and 4.
6. Adjust with 3 and 6 for the 2.0±0.05Vp-p.

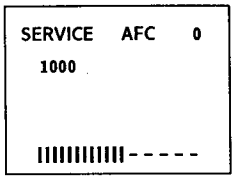


7. Write the memory by pressing MUTING then ENTER .
8. Return the following back to normal after adjustment.

PICTURE	·····	MAX
BRIGHT	·····	CENTER
COLOR	·····	CENTER
R OFF	·····	ON
G OFF	·····	ON
B OFF	·····	ON

DISPLAY POSITION ADJUSTMENT (DISP)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Select DISP with 1 and 4.
4. Adjust with 3 and 6 for the bar center.
5. Write the memory by pressing MUTING then ENTER .



SUB BRIGHT ADJUSTMENT (SBRT)

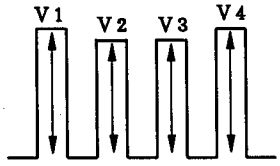
1. Input a cross-hatch signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Select SBRT with 1 and 4.
5. Adjust with 3 and 6 for obtain a faintly visible cross-hatch.
6. Write into the memory by pressing MUTING then ENTER .

SUB BALANCE ADJUSTMENT (SBAL)

1. Input a stereo signal.
2. Set to service adjustment mode.
3. Select SBAL with 1 and 4.
4. Adjust with 3 and 6 for the best sound balance.
5. Write into the memory by pressing MUTING then ENTER .

SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Connect an oscilloscope to CN703 Pin③ (B OUT) of C board.
4. Select SHUE and SCOL with 1 and 4.
5. Adjust with 3 and 6 for the V1=V4 (SCOR) and V2 =V3 (SHUE).

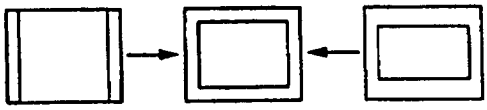


6. Write into the memory by pressing MUTING then ENTER .

V.SIZE ADJUSTMENT (VSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VSIZ with 1 and 4.
4. Adjust with 3 and 6 for the best vertical size.
5. Write into the memory by pressing MUTING then ENTER .

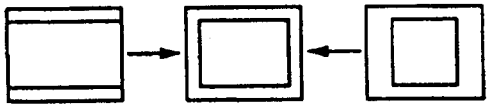
V. SIZE (VSIZ)



H.SIZE ADJUSTMENT (HSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select HSIZ with 1 and 4.
4. Adjust with 3 and 6 for best horizontal size.
5. Write into the memory by pressing MUTING then ENTER .

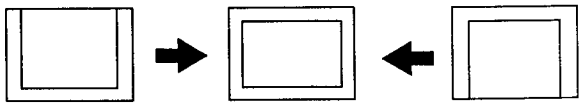
H. SIZE (HSIZ)



V.CENTER ADJUSTMENT (VPOS)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VPOS with 1 and 4.
4. Adjust with 3 and 6 for the best vertical senter.
5. Write into the memory by pressing MUTING then ENTER .

V. CENTER (VPOS)

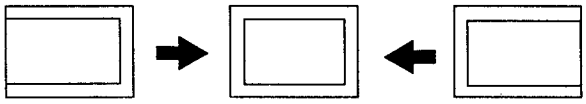


H.CENTER ADJUSTMENT (H POS)

Note: Perform this adjustment after H.FREQUENCY ADJUSTMENT (HFRE).

1. Input a cross-hatch signal.
2. Set the Service adjustment mode.
3. Select HPOS with 1 and 4.
4. Adjust with 3 and 6 to the best horizontal center.
5. Write into the memory by pressing MUTING then ENTER.

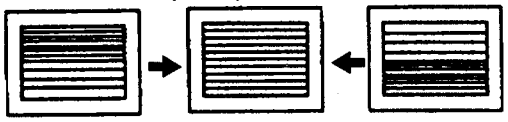
H. CENTER (HPOS)



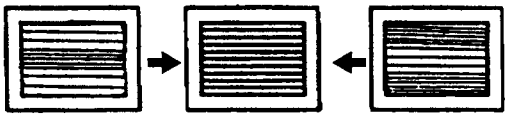
V LINEARITY(VLIN), VS CORRECTION(VSCO), PIN AMP(PAMP), CORNER PIN(CPIN), AND PIN PHASE(PPHA) ADJUSTMENTS

1. Input a cross-hatch signal.
2. Set to Service adjustment Mode.
3. Select VLIN, VSCO, PAMP, CPIN, and PPHA with 1 and 4.
4. Adjust with 3 and 6 for the best picture.
5. Write the memory byPressing MUTING then ENTER.

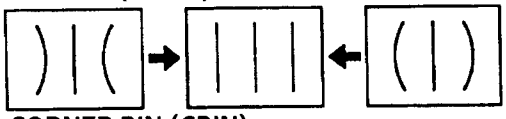
V LINEARITY (VLIN)



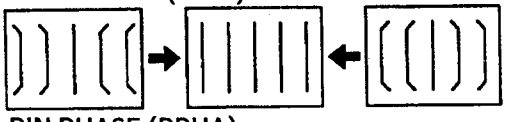
VS CORRECTION (VSCO)



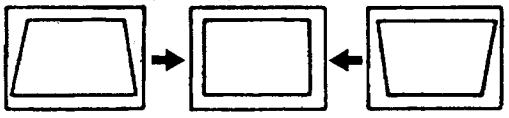
PIN AMP (PAMP)



CORNER PIN (CPIN)

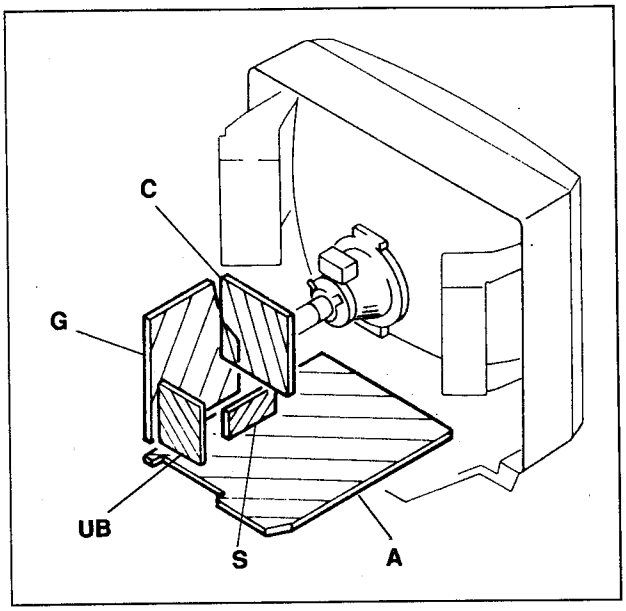


PIN PHASE (PPHA)



MEMO

6-2. CIRCUIT BOARDS LOCATION



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted.
  pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4W

- Chips resistors are 1/10W.
- All resistors are in ohms.
  kΩ=1000Ω, MΩ=1000KΩ
- : nonflammable resistor.
- : fusible resistor.
- △: internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ◪ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved.
  (Refer to R511 and R537 on page 33, 34)
- When replacing the part in below table be sure to parform the related adjustment.

Part replaced (◪)		Adjustment (⊠)
C524, R511, R534, R549, PM501	A BOARD	B+ HOLD-DOWN (R511)
IC602, R637	G BOARD	
D511, C523, C524, R534, R535, R537, R549, PM501, T504	D BOARD	HOLD-DOWN (R537)
IC602, R637	G BOARD	
DY		

- All voltages are in V.
- Voltage are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- : B+ line.
- : B– line.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol display is on the component side.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

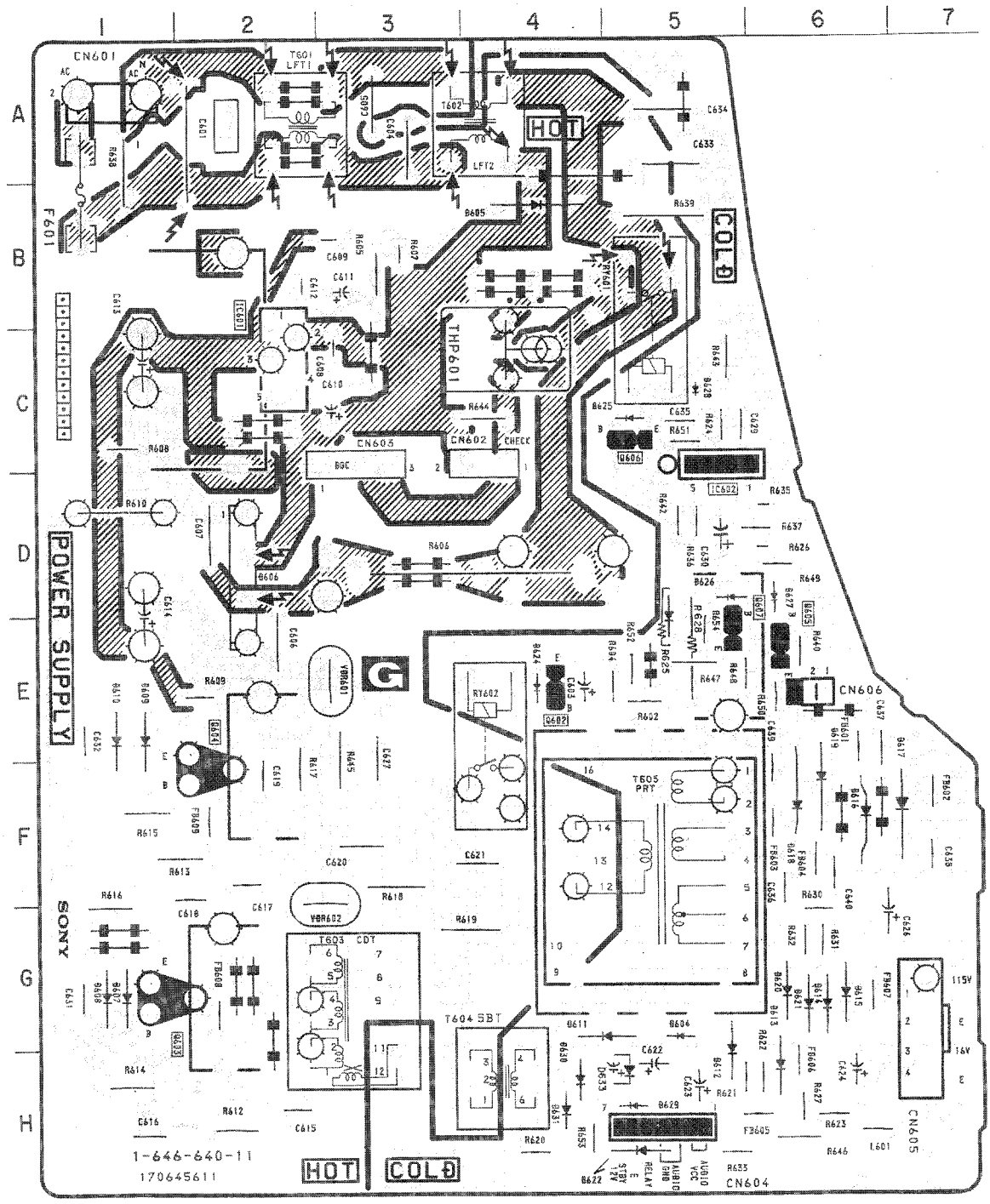
The symbol indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

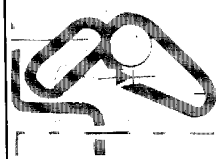
G [POWER SUPPLY, DEGAUSSING CIRCUIT]

— G Board —

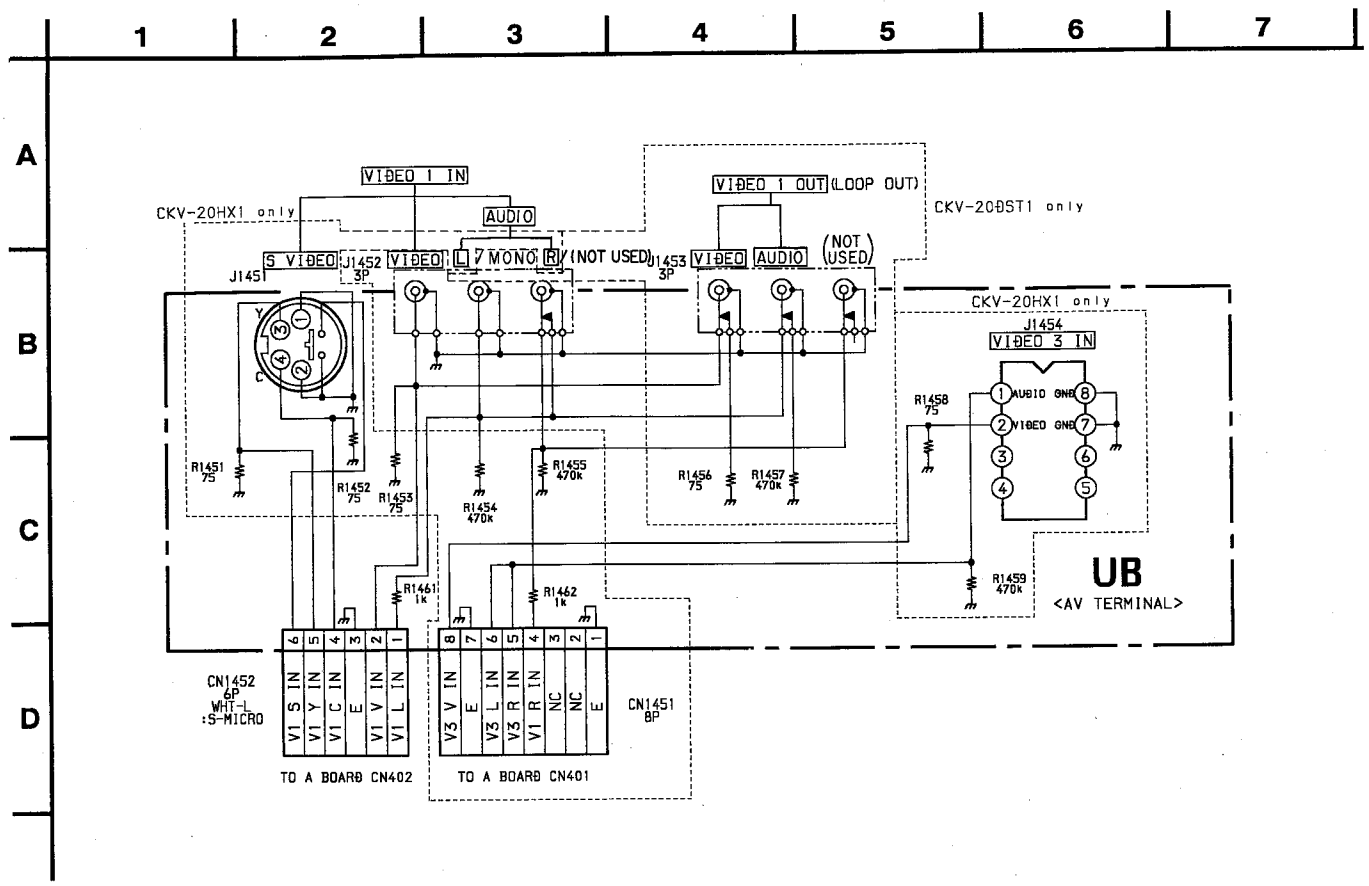


— G Board —

IC	
IC601	B-3
IC602	C-5
TRANSISTOR	
Q602	E-4
Q603	G-1
Q604	F-2
Q605	E-6
Q606	C-5
Q607	E-5
DIODE	
D604	G-5
D605	B-4
D606	D-2
D607	G-1
D608	G-1
D609	E-1
D610	E-1
D611	G-4
D612	H-5
D613	H-6
D614	G-6
D615	G-6
D616	F-6
D617	F-7
D618	F-6
D619	F-6
D620	G-6
D621	G-6
D622	H-5
D624	E-4
D625	C-5
D627	D-6
D629	H-5
D630	H-4
D632	E-4

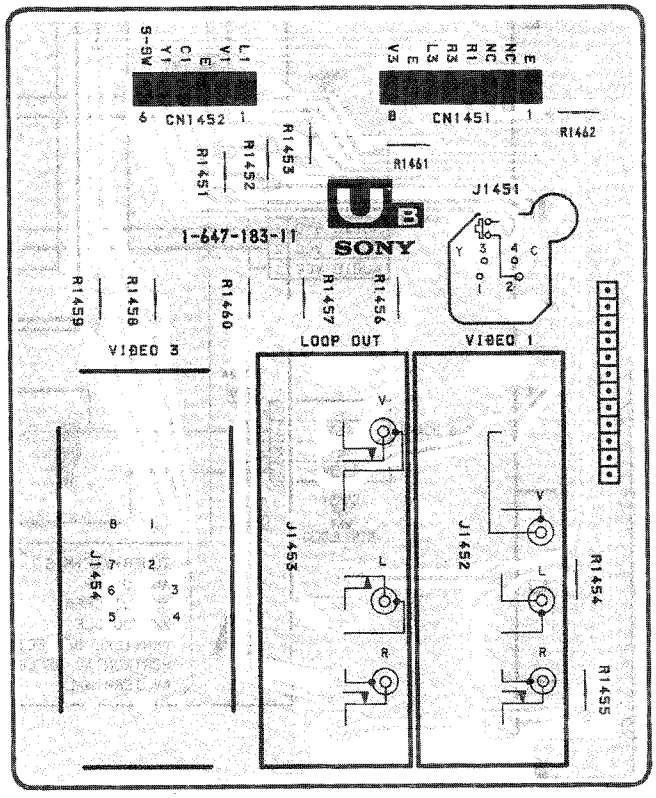


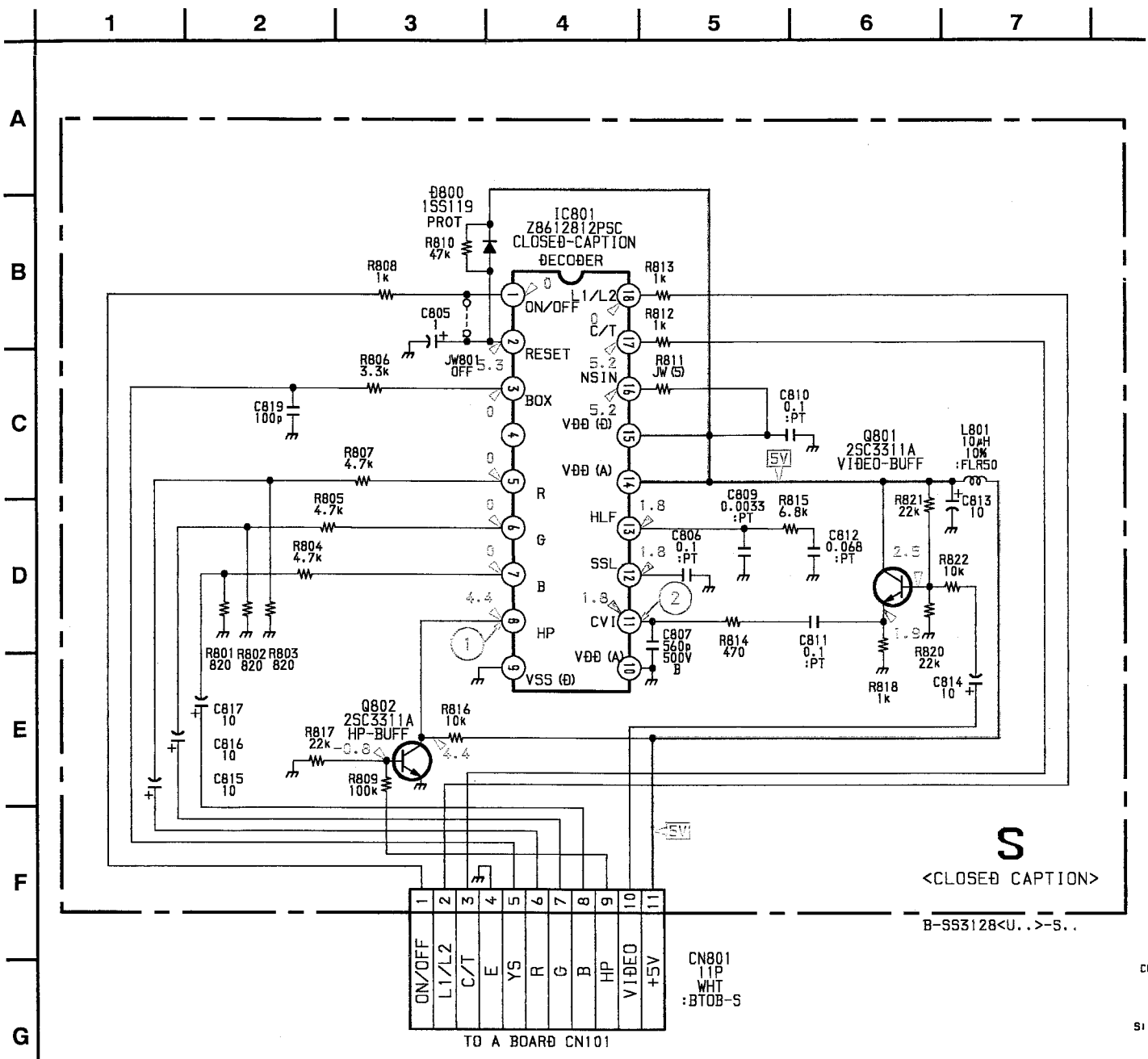
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



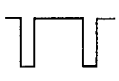
UB [AV TERMINAL]

— UB Board —



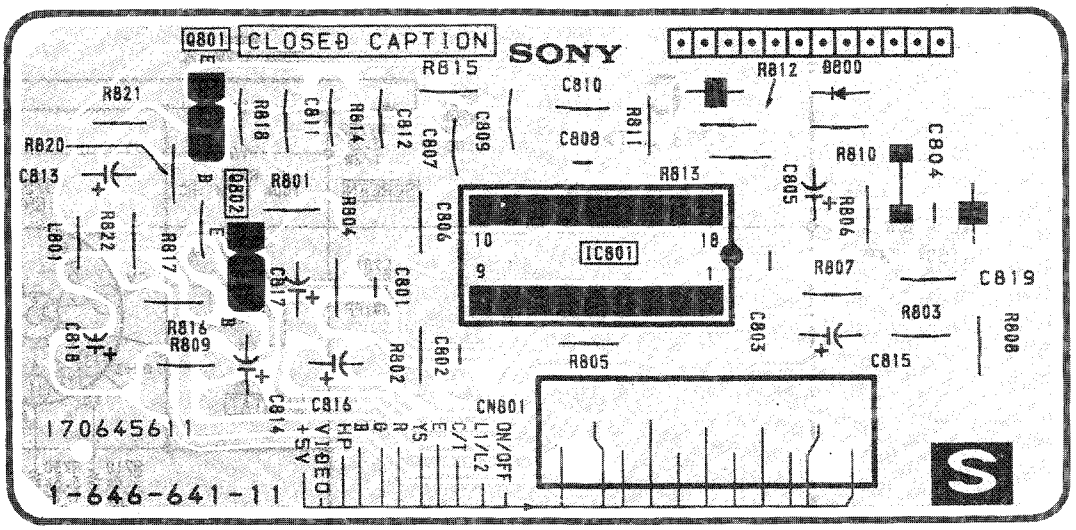


— S Board —

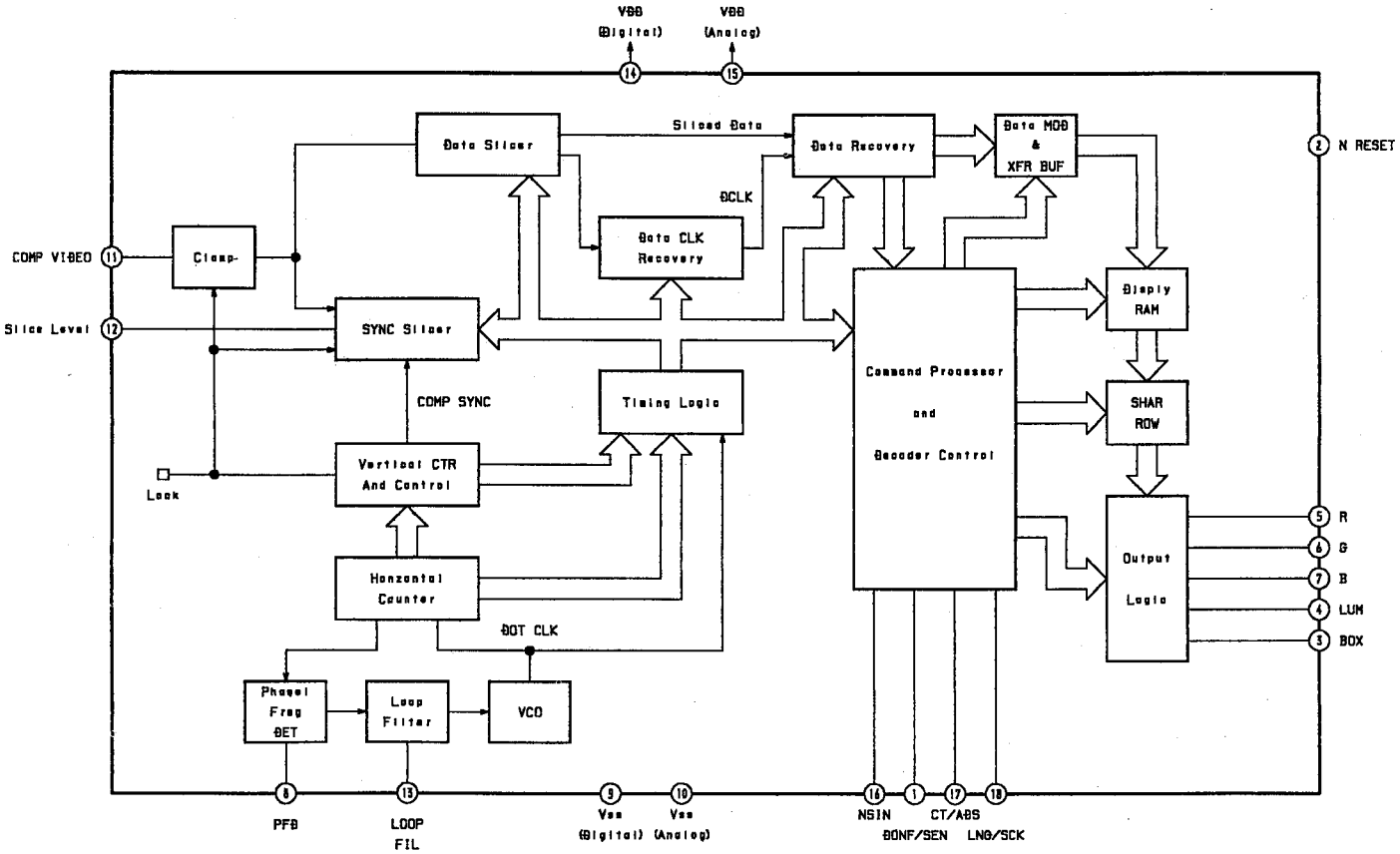
①	②
	
5 Vp-p (H)	1 Vp-p (H)

S [CLOSED CAPTION]

— S Board —

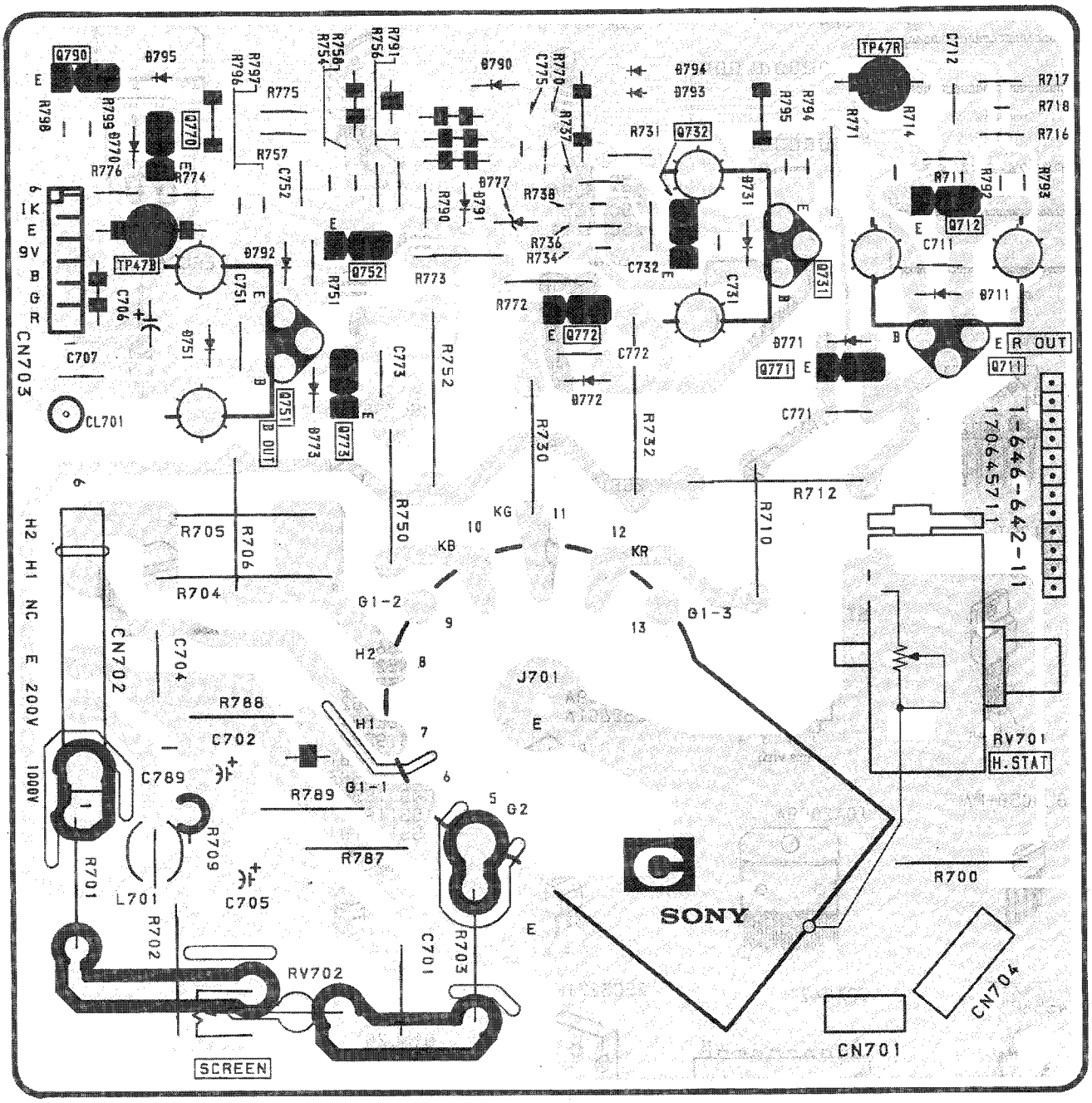


S BOARD IC801 Z8612812PSC



C [R.G.B. OUT]

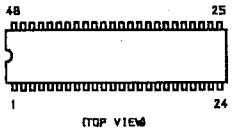
— C Board —



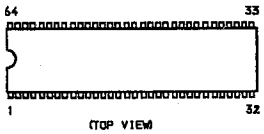
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

6-4. SEMICONDUCTORS

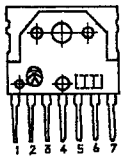
CXA1465AS



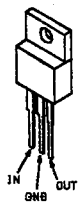
CXP8024-SV4397



LA7830

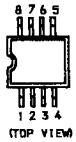


LM7812CT
MC7812CT
MC7809CT

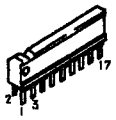


L78LR05Đ-MA

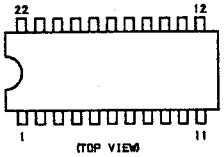
MM1114XFF
RC4558PS



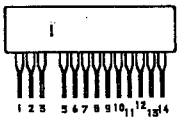
M51132L



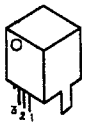
M52470AP
M52470P



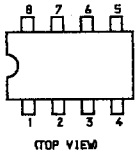
PM-35



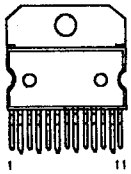
SBX1618-51



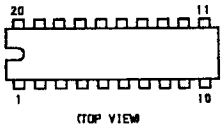
ST24C02AB1



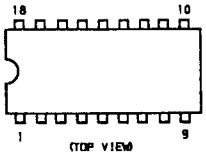
TĐA2009A



TĐA8424

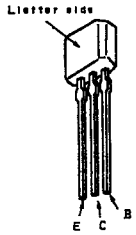


Z8612812PSC



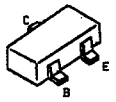
2SA10910
2SA1091-0

2SA1175
2SA1309A
2SC2785
2SC3311A

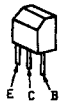


2SB1370

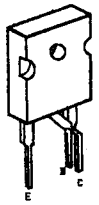
2SB709A
2SĐ601A



2SC3209LK

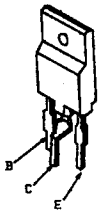


2SC3271F



2SC4833MNP

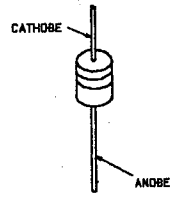
2SĐ1878



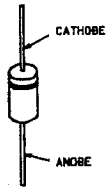
2SĐ2394

2SĐ788

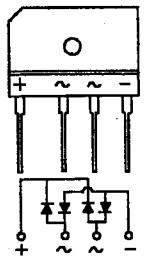
Đ1NS4
Đ1NS6
Đ1NS20R
RĐ13ESB2
RĐ30ESB2
RĐ30ESB4
RĐ3.9ESB1
RĐ5.1ESB1
RĐ5.6ESB3
RĐ9.1ESB3
1SS119
1SS119TĐ



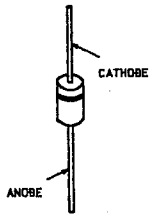
Đ1NL20
EGP20G
EL1E
EL1E-V1
GP08Đ
RGP02-17
RGP02-17PKG23
RGP10GPKG3
RGP15GPKG23



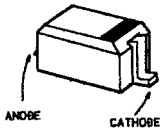
Đ4SB60L



ERC06-15S



1T33



SECTION 7
EXPLODED VIEWS

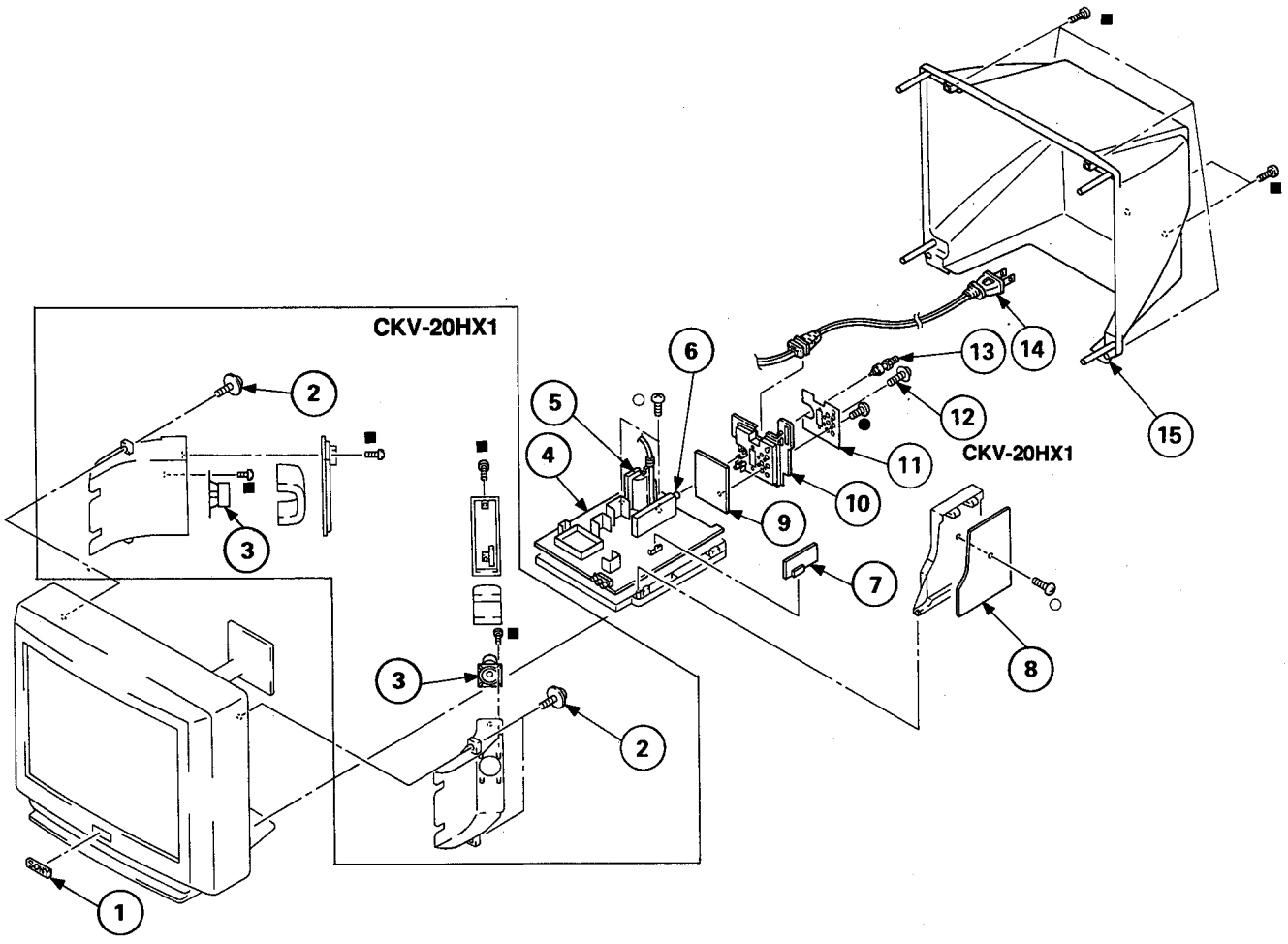
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

7-1. CHASSIS

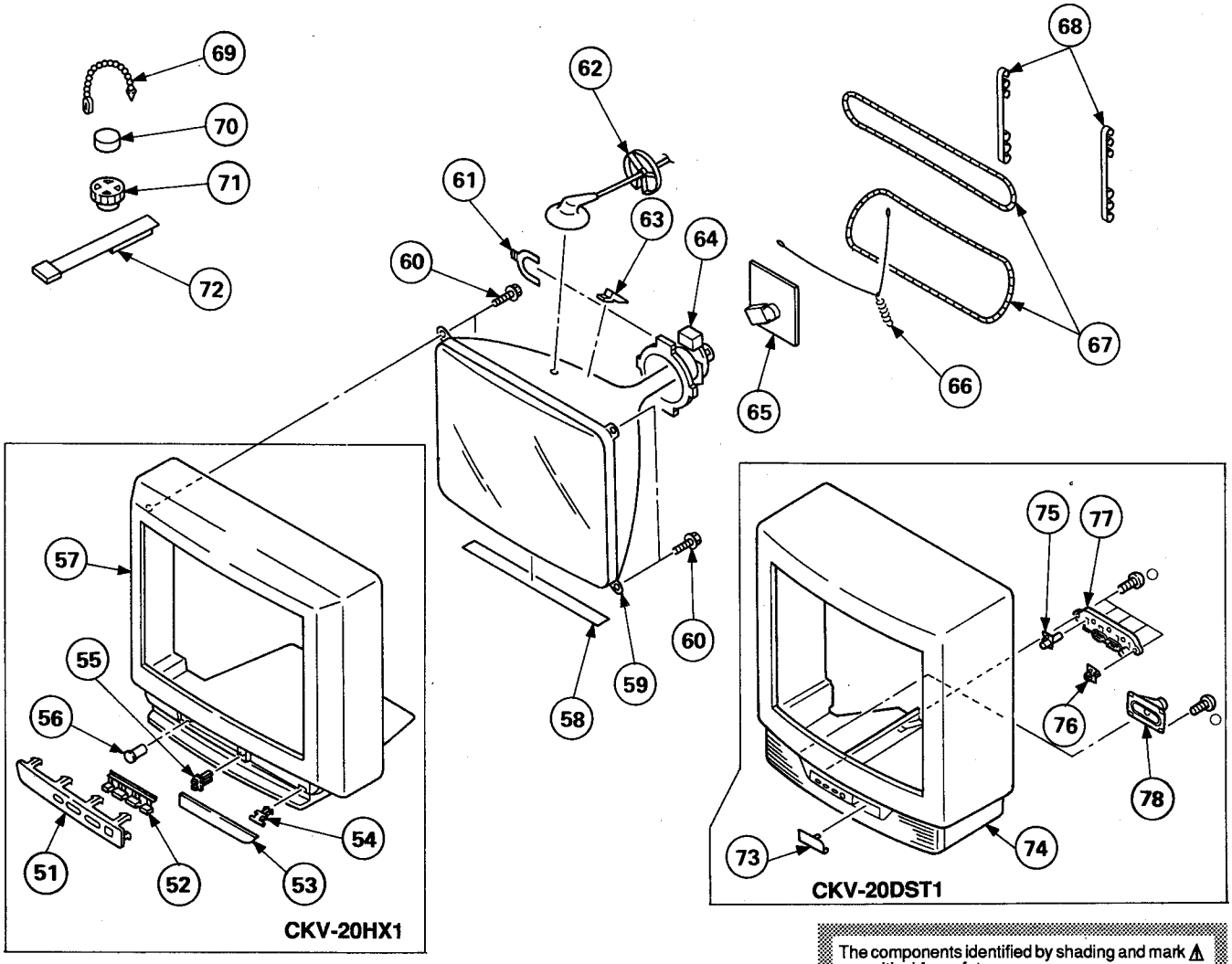
● : BVTP3x12 7-685-648-79 (BLACK)
○ : BVTP3x12 7-685-648-71
■ : BVTP4x16 7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-394-072-01	EMBLEM (NO.8), SONY	
2	4-384-096-01	SCREW (4X16), TAPPING, +P (CKV-20HX1)	
3	1-504-304-11	SPEAKER (8CM) (CKV-20HX1)	
4	*A-1297-093-A	A BOARD, COMPLETE (CKV-20HX1)	
	*A-1297-094-A	A BOARD, COMPLETE (CKV-20DST1)	
5	⚠1-453-141-11	TRANSFORMER ASSY, FLYBACK (NX-1600A5)	
6	⚠8-598-039-01	TUNER BTF-WA401 (CKV-20HX1)	
	⚠8-598-047-00	TUNER BTF-LA401 (CKV-20DST1)	
7	*1-646-641-11	S BOARD	
8	*A-1316-146-A	G BOARD, COMPLETE	
9	*1-647-183-11	UB BOARD	
10	4-039-851-11	TERMINAL BOARD, ANTENNA	
11	4-040-339-01	LABEL, TERMINAL (CKV-20HX1)	
	4-040-342-01	LABEL, TERMINAL (CKV-20DST1)	
12	4-382-854-11	SCREW (M3X10), P, SW (+) (CKV-20HX1)	
13	1-573-657-11	PLUG, F-PIN	
14	⚠1-751-057-11	CORD, POWER (WITH CONNECTOR)	
15	4-039-603-01	COVER, REAR (CKV-20DST1)	
	4-040-352-01	COVER, REAR (CKV-20HX1)	

7-2. PICTURE TUBE

○ : BVTP3x12 7-685-648-71



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	4-040-346-01	PANEL, CONTROL (CKV-20HX1)	
52	4-040-345-01	BUTTON, MULTI (CKV-20HX1)	
53	4-040-347-01	DOOR, CONTROL (CKV-20HX1)	
54	3-703-035-11	SHAFT, LID (CKV-20HX1)	
55	*4-031-413-01	GUIDE, LIGHT (CKV-20HX1)	
56	*4-389-517-01	GUIDE (R), LIGHT (CKV-20HX1)	
57	X-4031-130-1	CABINET ASSY (WITH BEZEL ASSY) (CKV-20HX1)	
58	4-385-725-01	SHEET, BLOTTING	
59	⚠8-738-764-05	PICTURE TUBE (A51JUH51X)	
60	4-365-808-01	SCREW (5), TAPPING	
61	1-452-277-00	MAGNET, BMC (CKV-20HX1)	
62	*3-704-372-01	HOLDER, HV CABLE	
63	3-704-495-01	SPACER, DY	
64	⚠1-451-280-11	DEFLECTION YOKE (Y21PXA2)	
65	*A-1331-246-A	C BOARD, COMPLETE	
66	*4-375-394-01	SPRING, TENSION	
67	⚠1-426-358-11	COIL, DEMAGNETIZATION	
68	*4-369-319-00	BAND, COIL	
69	4-308-870-00	CLIP,LEAD WIRE	
70	1-452-032-00	MAGNET, DISK; 10MM ϕ	
71	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	
72	X-4308-815-0	PERMALLOY ASSY, CONVERGENCE	
73	4-039-576-01	PANEL (CKV-20DST1)	
74	4-039-678-01	CABINET (WITH BEZEL) (CKV-20DST1)	
75	4-039-589-01	FILTER, REMOTE (CKV-20DST1)	
76	4-039-594-11	GUIDE, LED (CKV-20DST1)	
77	4-039-595-01	BUTTON, MULTI (CKV-20DST1)	
78	1-504-252-11	SPEAKER (9X5CM) (CKV-20DST1)	

A

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F: nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF: μF, PF: μμF

COILS
- MMH: mH, UH: μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1297-093-A	A BOARD, COMPLETE (CKV-20HX1)			
		**********			
	*A-1297-094-A	A BOARD, COMPLETE (CKV-20DST1)			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C002	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V	
C003	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C007	1-124-903-11	ELECT 1MF	20%	50V	
C011	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C012	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C013	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C014	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C015	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C016	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C017	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C018	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C019	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C020	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C030	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C039	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C040	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C041	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C043	1-163-159-00	CERAMIC CHIP 12PF	2%	50V	
C045	1-126-103-11	ELECT 470MF	20%	16V	
C046	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C047	1-104-896-91	CERAMIC CHIP 24PF	2%	50V	
C049	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C050	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	
C051	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C052	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C053	1-163-121-00	CERAMIC CHIP 150PF	5%	50V	
C054	1-163-253-11	CERAMIC CHIP 120PF	5%	50V	
C055	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C056	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C057	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C058	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V	
C059	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C060	1-124-903-11	ELECT 1MF	20%	50V	
C062	1-124-907-11	ELECT 10MF	20%	50V	
C063	1-124-925-11	ELECT 2.2MF	20%	50V (CKV-20DST1)	
C066	1-124-903-11	ELECT 1MF	20%	50V	
C101	1-124-925-11	ELECT 2.2MF	20%	50V (CKV-20DST1)	
C101	1-249-409-11	CARBON 220 5%		1/4W F (CKV-20HX1)	
C201	1-124-120-11	ELECT 220MF	20%	16V	
C202	1-124-907-11	ELECT 10MF	20%	50V	
C203	1-124-477-11	ELECT 47MF	20%	16V	
C204	1-126-101-11	ELECT 100MF	20%	16V	
C206	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C208	1-124-907-11	ELECT 10MF	20%	50V (CKV-20DST1)	
C251	1-124-925-11	ELECT 2.2MF	20%	50V	
C254	1-126-101-11	ELECT 100MF	20%	16V	
C255	1-124-916-11	ELECT 22MF	20%	25V	
C256	1-126-101-11	ELECT 100MF	20%	16V (CKV-20HX1)	
C257	1-124-925-11	ELECT 2.2MF	20%	50V (CKV-20HX1)	
C258	1-136-169-00	FILM 0.22MF	5%	50V (CKV-20HX1)	
C259	1-136-173-00	FILM 0.47MF	5%	50V	
C260	1-124-907-11	ELECT 10MF	20%	50V	
C261	1-124-360-00	ELECT 1000MF	20%	16V	
C262	1-124-925-11	ELECT 2.2MF	20%	50V	
C263	1-136-169-00	FILM 0.22MF	5%	50V	
C270	1-124-907-11	ELECT 10MF	20%	50V (CKV-20HX1)	
C271	1-124-907-11	ELECT 10MF	20%	50V (CKV-20HX1)	
C272	1-124-360-00	ELECT 1000MF	20%	16V (CKV-20HX1)	
C272	1-126-103-11	ELECT 470MF	20%	16V (CKV-20DST1)	
C273	1-124-360-00	ELECT 1000MF	20%	16V (CKV-20HX1)	
C301	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	
C304	1-124-907-11	ELECT 10MF	20%	50V	
C305	1-124-903-11	ELECT 1MF	20%	50V	
C306	1-163-035-00	CERAMIC CHIP 0.047MF		50V	
C307	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C308	1-124-902-00	ELECT 0.47MF	20%	50V	
C309	1-163-099-00	CERAMIC CHIP 18PF	5%	50V	
C310	1-124-916-11	ELECT 22MF	20%	25V	
C311	1-137-399-11	FILM 0.1MF	5%	50V	
C312	1-137-399-11	FILM 0.1MF	5%	50V	
C313	1-137-399-11	FILM 0.1MF	5%	50V	
C314	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V	
C315	1-124-120-11	ELECT 220MF	20%	16V	
C318	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C319	1-124-902-00	ELECT 0.47MF	20%	50V	
C320	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C321	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	
C322	1-163-011-11	CERAMIC CHIP 0.0015MF	10%	50V	
C323	1-163-007-11	CERAMIC CHIP 680PF	10%	50V	
C324	1-124-903-11	ELECT 1MF	20%	50V	
C325	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C326	1-124-903-11	ELECT 1MF	20%	50V	

A

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
C327	1-102-244-00	CERAMIC	220PF	10%	500V	
C328	1-124-902-00	ELECT	0.47MF	20%	50V	
C329	1-124-925-11	ELECT	2.2MF	20%	50V	
C330	1-163-007-11	CERAMIC CHIP	680PF	10%	50V	
C332	1-136-169-00	FILM	0.22MF	5%	50V	
C333	1-136-169-00	FILM	0.22MF	5%	50V	
C334	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C335	1-124-903-11	ELECT	1MF	20%	50V	
C336	1-124-907-11	ELECT	10MF	20%	50V	
C340	1-126-101-11	ELECT	100MF	20%	16V	
C341	1-124-903-11	ELECT	1MF	20%	50V	
C342	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C345	1-124-477-11	ELECT	47MF	20%	16V	
C347	1-126-101-11	ELECT	100MF	20%	16V	
C401	1-163-031-11	CERAMIC CHIP	0.01MF		50V	(CKV-20HX1)
C402	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C403	1-124-907-11	ELECT	10MF	20%	50V	
C404	1-124-903-11	ELECT	1MF	20%	50V	
C405	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C408	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C409	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C410	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C412	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C413	1-124-907-11	ELECT	10MF	20%	50V	
C414	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C415	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C416	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	(CKV-20HX1)
C417	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	(CKV-20HX1)
C418	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C419	1-124-903-11	ELECT	1MF	20%	50V	
C420	1-124-907-11	ELECT	10MF	20%	50V	
C421	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)
C424	1-124-925-11	ELECT	2.2MF	20%	50V	(CKV-20HX1)
C425	1-124-925-11	ELECT	2.2MF	20%	50V	
C430	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	(CKV-20HX1)
C431	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	(CKV-20HX1)
C432	1-126-101-11	ELECT	100MF	20%	16V	(CKV-20HX1)
C433	1-126-101-11	ELECT	100MF	20%	16V	(CKV-20HX1)
C434	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C435	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C436	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C437	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20HX1)

REF.NO.	PART NO.	DESCRIPTION				REMARK
C440	1-126-101-11	ELECT	100MF	20%	16V	
C441	1-124-477-11	ELECT	47MF	20%	16V	(CKV-20HX1)
C442	1-124-903-11	ELECT	1MF	20%	50V	(CKV-20HX1)
C461	1-124-907-11	ELECT	10MF	20%	50V	(CKV-20DST1)
C501	1-124-902-00	ELECT	0.47MF	20%	50V	
C502	1-124-916-11	ELECT	22MF	20%	50V	
C504	1-130-489-00	FILM	0.033MF	5%	50V	
C505	1-164-058-11	CERAMIC	33PF	5%	50V	
C506	1-124-916-11	ELECT	22MF	20%	50V	
C507	1-102-038-00	CERAMIC	0.001MF		500V	
C508	1-102-038-00	CERAMIC	0.001MF		500V	
C509	1-124-122-11	ELECT	100MF	20%	35V	
C510	1-137-421-91	FILM	0.068MF	10%	100V	
C511 ⚠	1-108-421-91	MYLAR	0.01MF	10%	200V	
C512	1-164-096-11	CERAMIC	0.01MF		50V	
C513	1-124-903-11	ELECT	1MF	20%	50V	
C515	1-124-480-11	ELECT	470MF	20%	25V	
C516	1-102-244-00	CERAMIC	220PF	10%	500V	
C517	1-162-114-00	CERAMIC	0.0047MF		2KV	
C518	1-124-480-11	ELECT	470MF	20%	25V	
C519	1-102-244-00	CERAMIC	220PF	10%	500V	
C520	1-124-046-00	ELECT	10MF	20%	160V	
C521	1-102-244-00	CERAMIC	220PF	10%	500V	
C522	1-123-024-21	ELECT	33MF		160V	
C523	1-123-932-00	ELECT	4.7MF	20%	160V	
C524	1-124-477-11	ELECT	47MF	20%	16V	
C525	1-106-387-00	MYLAR	0.068MF	10%	200V	
C526	1-124-916-11	ELECT	22MF	20%	25V	
C528	1-124-046-00	ELECT	10MF	20%	160V	
C553	1-102-228-00	CERAMIC	470PF	10%	500V	
C554 ⚠	1-162-134-91	CERAMIC	470PF	10%	2KV	
C555 ⚠	1-104-750-91	FILM	0.033MF	5%	400V	
C556 ⚠	1-136-080-11	FILM	0.011MF	3%	2KV	
C557	1-162-116-00	CERAMIC	680PF	10%	2KV	
C558	1-137-417-91	FILM	0.015MF	10%	100V	
C559	1-162-116-00	CERAMIC	680PF	10%	2KV	
C562	1-102-228-00	CERAMIC	470PF	10%	500V	
C564	1-136-111-00	FILM	1MF	5%	200V	
C568	1-124-634-11	ELECT	1MF	20%	250V	
C571	1-124-927-11	ELECT	4.7MF	20%	50V	
C574	1-136-569-11	FILM	1.2MF	5%	200V	
C575	1-106-371-00	MYLAR	0.015MF		200V	
C590	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C682	1-124-477-11	ELECT	47MF	20%	16V	
C683	1-124-478-11	ELECT	100MF	20%	25V	
C684	1-124-477-11	ELECT	47MF	20%	16V	
C686	1-124-477-11	ELECT	47MF	20%	16V	
C690	1-124-902-00	ELECT	0.47MF	20%	50V	
C691	1-124-120-11	ELECT	220MF	20%	25V	
C692	1-124-477-11	ELECT	47MF	20%	16V	

<FILTER BLOCK>

CM401	1-466-912-11	FILTER BLOCK, COMB (CKV-20HX1)

<CONNECTOR>

CN101	*1-573-978-11	CONNECTOR, BOARD TO BOARD 11P
CN102	*1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P
CN201	*1-564-505-11	PLUG, CONNECTOR 2P (CKV-20HX1)
CN202	*1-564-505-11	PLUG, CONNECTOR 2P

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN203	*1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	
CN301	*1-564-509-11	PLUG, CONNECTOR 6P	
CN401	*1-564-511-11	PLUG, CONNECTOR 8P (CKV-20HX1)	
CN402	*1-564-509-11	PLUG, CONNECTOR 6P	
CN501	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN502	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
CN651	*1-691-135-11	PIN, CONNECTOR (PC BOARD) 4P	
CN652	*1-564-510-11	PLUG, CONNECTOR 7P	
		<DIODE>	
D002	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119 (CKV-20HX1)	
D004	8-719-911-19	DIODE 1SS119 (CKV-20HX1)	
D005	8-713-300-57	DIODE 1T33	
D006	8-719-911-19	DIODE 1SS119 (CKV-20HX1)	
D009	8-719-911-19	DIODE 1SS119 (CKV-20DST1)	
D101	1-810-039-11	LED UNIT (CKV-20HX1)	
D101	1-810-039-21	LED UNIT (CKV-20DST1)	
D201	8-719-110-72	DIODE RD30ESB2	
D251	8-719-911-19	DIODE 1SS119	
D252	8-719-911-19	DIODE 1SS119 (CKV-20HX1)	
D302	8-719-109-84	DIODE RD5.1ESB1	
D401	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D402	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D403	8-719-110-36	DIODE RD13ESB2	
D404	8-719-110-36	DIODE RD13ESB2	
D405	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D408	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D409	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D410	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D412	8-719-109-88	DIODE RD5.6ESB1 (CKV-20HX1)	
D413	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D414	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D415	8-719-110-36	DIODE RD13ESB2 (CKV-20HX1)	
D502	8-719-936-82	DIODE GP08DPKG3	
D504	8-719-936-84	DIODE RGP10GPKG3	
D509	8-719-936-84	DIODE RGP10GPKG3	
D511 ⚠	8-719-302-44	DIODE EL1Z-V1	
D512	8-719-936-84	DIODE RGP10GPKG3	
D513	8-719-976-64	DIODE RGP02-17	
D551	8-719-979-85	DIODE EGP20G	
D552	8-719-945-80	DIODE ERC06-15S	
D681	8-719-109-90	DIODE RD5.6ESB3	
		<IC>	
IC101	8-752-841-16	IC CXP80424-065S	
IC102	8-759-043-86	IC ST24C02AB1	
IC103	8-741-100-62	IC SBX1618-51	
IC251 ⚠	8-759-980-43	IC TDA2009A	
IC301	8-752-059-67	IC CXA1465AS	
IC401	8-759-634-69	IC M52470P	
IC402	8-759-088-00	IC MM1114XFF (CKV-20HX1)	
IC403	8-759-088-00	IC MM1114XFF (CKV-20HX1)	
IC405	8-759-090-21	IC TDA8424 (CKV-20HX1)	
IC501	8-759-801-98	IC LA7830	
IC502	8-759-996-43	IC RC4558PS	
IC681 ⚠	8-759-013-09	IC MC7812CT	
IC682 ⚠	8-759-030-99	IC MC7809CT	
IC690 ⚠	8-759-805-37	IC L78LR05D-MA	
		<JACK>	
J251	1-750-264-11	JACK (CKV-20HX1)	
J403	1-750-267-11	JACK BLOCK, PIN (L TYPE) 3P (CKV-20HX1)	
		<COIL>	
L001	1-410-470-11	INDUCTOR 10UH	
L002	1-410-476-11	INDUCTOR 33UH	
L003	1-410-470-11	INDUCTOR 10UH	
L201	1-410-645-31	INDUCTOR 100UH	
L202	1-408-408-00	INDUCTOR 8.2UH	
L502	1-410-669-31	INDUCTOR 33UH	
L503 ⚠	1-412-531-61	INDUCTOR 33UH	
L551	1-412-533-61	INDUCTOR 47UH	
L555	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
L556 ⚠	1-459-769-13	COIL, HORIZONTAL LINEARITY	
L557	1-412-553-61	INDUCTOR 3.3MMH	
L560	1-459-104-00	COIL, WITH CORE	
L561 ⚠	1-459-390-31	COIL (WITH CORE)	
		<MODULE>	
PM501	1-810-040-11	PROTECTOR MODULE PM-35	
		<IC LINK>	
PS201 ⚠	1-532-675-91	LINK, IC 1.5A	
		<TRANSISTOR>	
Q001	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q004	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q005	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q007	8-729-422-27	TRANSISTOR 2SD601A-Q (CKV-20HX1)	
Q261	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q262	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q309	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q310	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q311	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q401	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q402	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q550	8-729-140-96	TRANSISTOR 2SD774-34	
Q551	8-729-821-87	TRANSISTOR 2SD1878-CA	
Q553	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q681 ⚠	8-729-320-61	TRANSISTOR 2SD788-34TZ	
		<RESISTOR>	
R001	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R003	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R004	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R005	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R006	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R008	1-216-033-00	METAL GLAZE 220 5% 1/10W	(CKV-20HX1)
R009	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R010	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R011	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R012	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R013	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(CKV-20HX1)
R016	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R017	1-216-033-00	METAL GLAZE 220 5% 1/10W	

A

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R018	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R019	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R020	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R021	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20HX1)
R022	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20HX1)
R023	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R025	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R026	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R027	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R028	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R029	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R030	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R031	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R032	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R033	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R034	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R035	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R036	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R037	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R038	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R039	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R040	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R041	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R042	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R043	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R044	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R045	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R046	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R047	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R048	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R049	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R050	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R051	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R052	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R054	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R055	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20DST1)
R056	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R057	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R059	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R060	1-216-033-00	METAL GLAZE	220	5%	1/10W	(CKV-20HX1)
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20DST1)
R062	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	(CKV-20DST1)
R063	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(CKV-20DST1)
R064	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R065	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R066	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R067	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R069	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	(CKV-20DST1)
R071	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R074	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R078	1-249-429-11	CARBON	10K	5%	1/4W	
R081	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R083	1-249-437-11	CARBON	47K	5%	1/4W	
R085	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R086	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R088	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
						(CKV-20HX1)
R089	1-216-041-00	METAL GLAZE	470	5%	1/10W	(CKV-20HX1)
R091	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R092	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R093	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20DST1)
R095	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R096	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R097	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20DST1)
R102	1-216-039-00	METAL GLAZE	390	5%	1/10W	(CKV-20HX1)
R203 ⚠	1-215-899-91	METAL OXIDE	15K	5%	2W	F
R206	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R207	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R208	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	(CKV-20DST1)
R209	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20DST1)
R210	1-216-041-00	METAL GLAZE	470	5%	1/10W	(CKV-20DST1)
R251	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	(CKV-20HX1)
R251	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20DST1)
R252	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	(CKV-20HX1)
R253	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R254	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R256	1-216-015-00	METAL GLAZE	39	5%	1/10W	(CKV-20HX1)
R257	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20HX1)
R258	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R259	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	(CKV-20HX1)
R260	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20DST1)
R262	1-216-075-00	METAL GLAZE	12K	5%	1/10W	(CKV-20HX1)
R263	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R264	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R265	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R266	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R267	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R268	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R269 ⚠	1-247-767-91	CARBON	2.2	5%	1/4W	(CKV-20HX1)
R270 ⚠	1-247-767-91	CARBON	2.2	5%	1/4W	
R271	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
R272	1-249-411-11	CARBON	330	5%	1/4W	(CKV-20HX1)
R273	1-249-411-11	CARBON	330	5%	1/4W	(CKV-20HX1)
R276	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
R301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R302	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R311	1-216-678-11	METAL CHIP	13K	0.50%	1/10W	
R312	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R313	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	

A

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

• The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R314	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R315	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R319	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R320	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R321	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R322	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R323	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R324	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R326	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R327	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R328	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R329	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R330	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R331	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R335	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R336	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R338	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R339	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R341	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R343	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R345	1-249-429-11	CARBON	10K	5%	1/4W	
R346	1-249-421-11	CARBON	2.2K	5%	1/4W	
R347	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R351	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R356	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R357	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R358	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R360	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R361	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R362	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R363	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R364	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R365	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R367	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R404	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R409	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R410	1-216-022-00	METAL GLAZE	75	5%	1/10W	(CKV-20HX1)
R411	1-216-113-00	METAL GLAZE	470K	5%	1/10W	(CKV-20HX1)
R412	1-216-113-00	METAL GLAZE	470K	5%	1/10W	(CKV-20HX1)
R413	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R414	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R415	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R417	1-216-033-00	METAL GLAZE	220	5%	1/10W	(CKV-20HX1)
R418	1-216-045-00	METAL GLAZE	680	5%	1/10W	(CKV-20HX1)
R420	1-216-043-00	METAL GLAZE	560	5%	1/10W	(CKV-20HX1)
R421	1-216-043-00	METAL GLAZE	560	5%	1/10W	(CKV-20HX1)
R422	1-216-045-00	METAL GLAZE	680	5%	1/10W	(CKV-20HX1)
R423	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R424	1-216-025-00	METAL GLAZE	100	5%	1/10W	(CKV-20HX1)
R425	1-216-033-00	METAL GLAZE	220	5%	1/10W	(CKV-20HX1)
R429	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R430	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R440	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(CKV-20HX1)
R441	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R442	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(CKV-20HX1)
R443	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R444	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R445	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R446	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
R447	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(CKV-20HX1)
R448	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
R449	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(CKV-20HX1)
R450	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R451	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(CKV-20HX1)
R452	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
R453	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R454	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R455	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R466	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20HX1)
R472	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R473	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R476	1-249-429-11	CARBON	10K	5%	1/4W	(CKV-20HX1)
R477	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(CKV-20HX1)
R478	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20HX1)
R479	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R480	1-216-295-00	METAL GLAZE	0	5%	1/10W	(CKV-20HX1)
R481	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20HX1)
R482	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(CKV-20HX1)
R505 ⚠	1-216-349-91	METAL OXIDE	1	5%	1W	F
R506 ⚠	1-216-429-91	METAL OXIDE	270	5%	1W	F
R507	1-247-887-00	CARBON	220K	5%	1/4W	
R508	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R509	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R510	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
⊠R511 ⚠		METAL			1/4W	
R512	1-215-445-00	METAL	10K	1%	1/4W	
R513	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R515	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W	
R517	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R518	1-215-431-00	METAL	2.7K	1%	1/4W	
R519	1-215-427-00	METAL	1.8K	1%	1/4W	
R520	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R530	1-249-419-11	CARBON	1.5K	5%	1/4W	
R531 ⚠	1-216-357-91	METAL OXIDE	4.7	5%	1W	F
R532 ⚠	1-215-880-91	METAL OXIDE	10	5%	2W	F
R533 ⚠	1-216-359-91	METAL OXIDE	6.8	5%	1W	F
R534	1-249-393-11	CARBON	10	5%	1/4W	F
R535 ⚠	1-249-389-91	CARBON	4.7	5%	1/4W	F

A **G**

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value originally used.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
⊠R537⚠		METAL			1/4W	
R538	1-249-441-11	CARBON	100K	5%	1/4W	
R541	1-249-418-11	CARBON	1.2K	5%	1/4W	F
R542⚠	1-216-357-91	METAL OXIDE	4.7	5%	1W	F
R549⚠	1-216-369-91	METAL OXIDE	1	5%	2W	F
R554	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R555⚠	1-215-896-91	METAL OXIDE	4.7K	5%	2W	F
R558	1-260-326-71	CARBON	680	5%	1/2W	
R559⚠	1-215-862-91	METAL OXIDE	68	5%	1W	F
R588	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R590	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R591	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R592	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R593	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R594	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R595	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R599⚠	1-215-857-91	METAL OXIDE	10	5%	1W	F
R681⚠	1-215-883-91	METAL OXIDE	33	5%	2W	F
R682	1-249-415-11	CARBON	680	5%	1/4W	
R683⚠	1-216-356-91	METAL OXIDE	3.9	5%	1W	F
R684⚠	1-216-380-91	METAL OXIDE	8.2	5%	2W	F

<SWITCH>

S001	1-571-532-21	SWITCH, TACTIL
S002	1-571-532-21	SWITCH, TACTIL
S003	1-571-532-21	SWITCH, TACTIL
S004	1-571-532-21	SWITCH, TACTIL
S005	1-571-532-21	SWITCH, TACTIL
S006	1-571-532-21	SWITCH, TACTIL

<TRANSFORMER>

T504⚠	1-453-141-11	TRANSFORMER ASSY, FLYBACK (NX-1600A5)
T551	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE

<TUNER>

TU101⚠	8-598-039-01	TUNER BTF-WA401 (CKV-20HX1)
TU101⚠	8-598-047-00	TUNER BTF-LA401 (CKV-20DST1)

<CRYSTAL>

X001	1-579-917-21	VIBRATOR, CRYSTAL
X301	1-567-505-11	OSCILLATOR, CRYSTAL

****

*A-1316-146-A	G BOARD, COMPLETE	
	**********	
1-533-223-11	CLIP, FUSE	
4-382-854-11	SCREW (M3X10), P, SW (+)	

<CAPACITOR>

C601⚠	1-136-311-51	FILM	0.47MF	20%	125V
C603	1-124-478-11	ELECT	100MF	20%	25V
C604⚠	1-162-677-51	CERAMIC	470PF	10%	125V
C605⚠	1-162-677-51	CERAMIC	470PF	10%	125V
C606⚠	1-102-050-51	CERAMIC	0.01MF		500V
C607⚠	1-102-050-51	CERAMIC	0.01MF		500V
C613	1-104-759-11	ELECT	470MF	20%	200V
C614	1-104-759-11	ELECT	470MF	20%	200V
C615	1-164-625-11	CERAMIC	680PF	10%	500V
C616	1-136-169-00	FILM	0.22MF	5%	50V
C617	1-136-169-00	FILM	0.22MF	5%	50V
C618	1-164-625-11	CERAMIC	680PF	10%	500V
C619	1-164-625-11	CERAMIC	680PF	10%	500V
C620	1-136-601-11	FILM	0.01MF	10%	630V
C621	1-129-744-91	FILM	0.027MF	10%	400V
C622	1-124-478-11	ELECT	100MF	20%	25V
C623	1-124-360-00	ELECT	1000MF	20%	16V
C624	1-124-557-11	ELECT	1000MF	20%	25V
C626	1-123-024-21	ELECT	33MF		160V
C627	1-136-601-11	FILM	0.01MF	10%	630V
C629	1-106-355-12	MYLAR	0.0033MF	10%	200V
C630	1-124-907-11	ELECT	10MF	20%	50V
C631	1-136-169-00	FILM	0.22MF	5%	50V
C632	1-136-169-00	FILM	0.22MF	5%	50V
C633⚠	1-162-677-51	CERAMIC	470PF	10%	125V
C634⚠	1-162-677-51	CERAMIC	470PF	10%	125V
C635	1-106-365-00	MYLAR	0.0082MF	10%	100V
C636	1-162-318-11	CERAMIC	0.001MF	10%	500V
C637	1-164-735-11	CAP, CERAMIC	1500PF		
C638	1-164-735-11	CAP, CERAMIC	1500PF		
C639	1-164-735-11	CAP, CERAMIC	1500PF		
C640	1-164-735-11	CAP, CERAMIC	1500PF		

<CONNECTOR>

CN601	*1-580-843-11	PIN, CONNECTOR (POWER)
CN602	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN603	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
CN604	*1-564-510-11	PLUG, CONNECTOR 7P
CN605	*1-691-135-11	PIN, CONNECTOR (PC BOARD) 4P
CN606	*1-564-505-11	PLUG, CONNECTOR 2P

<DIODE>

D604	8-719-911-19	DIODE 1SS119
D606⚠	8-719-510-63	DIODE D4SB60L-F
D607	8-719-510-48	DIODE D1N20R
D608	8-719-510-48	DIODE D1N20R
D609	8-719-510-48	DIODE D1N20R
D610	8-719-510-48	DIODE D1N20R
D611	8-719-032-13	DIODE D1NS6-TA2
D612	8-719-510-02	DIODE D1NS4
D613	8-719-510-02	DIODE D1NS4
D614	8-719-510-02	DIODE D1NS4
D615	8-719-510-02	DIODE D1NS4
D616	8-719-510-26	DIODE D1NL20
D617	8-719-510-26	DIODE D1NL20
D618	8-719-510-26	DIODE D1NL20
D619	8-719-510-26	DIODE D1NL20
D620	8-719-510-02	DIODE D1NS4
D621	8-719-510-02	DIODE D1NS4
D622	8-719-510-48	DIODE D1N20R
D624	8-719-911-19	DIODE 1SS119
D625	8-719-911-19	DIODE 1SS119
D626	8-719-110-14	DIODE RD9.1ESB3
D627	8-719-911-19	DIODE 1SS119
D629	8-719-911-19	DIODE 1SS119
D633	8-719-510-48	DIODE D1N20R

<FUSE>

F601⚠	1-532-748-11	FUSE, GLASS TUBE 6.3A/125V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

G C

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<FERRITE BEAD>				
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD				
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD				
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD				
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD				
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				
FB606	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				
FB607	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				
FB609	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				
		<IC>				
IC602⚠	1-810-050-11	POWER MODULE DM-47				
		<COIL>				
L601	1-412-533-61	INDUCTOR	47UH			
		<TRANSISTOR>				
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q603	8-729-016-15	TRANSISTOR 2SC4833MNP				
Q604	8-729-016-15	TRANSISTOR 2SC4833MNP				
Q605	8-729-924-90	TRANSISTOR 2SB1370-EF				
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q607	8-729-924-90	TRANSISTOR 2SB1370-EF				
		<RESISTOR>				
R602	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R604	1-249-421-11	CARBON	2.2K	5%	1/4W	
R608	1-247-893-11	CARBON	390K	5%	1/4W	
R609	1-247-893-11	CARBON	390K	5%	1/4W	
R610 ⚠	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R612 ⚠	1-216-349-71	METAL OXIDE	1	5%	1W	F
R613 ⚠	1-216-349-71	METAL OXIDE	1	5%	1W	F
R614 ⚠	1-215-904-71	METAL OXIDE	100K	5%	2W	F
R615 ⚠	1-215-904-71	METAL OXIDE	100K	5%	2W	F
R616 ⚠	1-215-858-71	METAL OXIDE	15	5%	1W	F
R617 ⚠	1-215-858-71	METAL OXIDE	15	5%	1W	F
R618 ⚠	1-212-855-61	FUSIBLE	8.2	5%	1/4W	F
R619	1-212-853-61	FUSIBLE	6.8	5%	1/4W	F
R620 ⚠	1-249-379-91	CARBON	0.68	5%	1/4W	F
R621 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R622 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R623 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R624	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R625 ⚠	1-215-864-71	METAL OXIDE	150	5%	1W	F
R627 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R628	1-249-435-11	CARBON	33K	5%	1/4W	F
R630 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R631 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R632 ⚠	1-249-377-91	CARBON	0.47	5%	1/4W	F
R633	1-249-388-11	CARBON	3.9	5%	1/4W	F
R636	1-249-421-11	CARBON	2.2K	5%	1/4W	
R637	1-249-407-11	CARBON	150	5%	1/4W	F
R639 ⚠	1-202-892-91	SOLID	4.7M	20%	1/2W	
R640	1-249-414-11	CARBON	560	5%	1/4W	
R642	1-249-421-11	CARBON	2.2K	5%	1/4W	
R643 ⚠	1-215-863-71	METAL OXIDE	100	5%	1W	F
R645 ⚠	1-212-855-61	FUSIBLE	8.2	5%	1/4W	F
R646 ⚠	1-216-422-71	METAL OXIDE	18	5%	1W	F
R647 ⚠	1-216-425-71	METAL OXIDE	56	5%	1W	F
R648	1-249-421-11	CARBON	2.2K	5%	1/4W	
R649	1-249-417-11	CARBON	1K	5%	1/4W	
R650	1-249-417-11	CARBON	1K	5%	1/4W	
R651	1-249-425-11	CARBON	4.7K	5%	1/4W	
R652	1-249-441-11	CARBON	330	5%	1/4W	
R653	1-249-417-11	CARBON	1K	5%	1/4W	
R654	1-249-414-11	CARBON	560	5%	1/4W	
R655	1-249-441-11	CARBON	100K	5%	1/4W	
		<RELAY>				
RY601⚠	1-515-684-31	RELAY				
RY602	1-515-516-00	RELAY				
		<TRANSFORMER>				
T601 ⚠	1-423-585-11	TRANSFORMER, LINE FILTER (LFT)				
T602 ⚠	1-423-585-11	TRANSFORMER, LINE FILTER (LFT)				
T603 ⚠	1-423-563-11	TRANSFORMER, CONVERTER DRIVE				
T604	1-423-582-11	TRANSFORMER, FERRITE (SBT)				
T605 ⚠	1-423-564-11	TRANSFORMER, CONVERTER (PIT)				
		<THERMISTOR>				
THP601⚠	1-808-081-14	THERMISTOR, POSITIVE				
		<VARISTOR>				
VDR601	1-810-052-21	VARISTOR				
VDR602	1-810-052-21	VARISTOR				

****

*A-1331-246-A C BOARD, COMPLETE
****

		<CAPACITOR>			
C701	1-136-601-11	FILM	0.01MF	10%	630V
C704	1-162-116-00	CERAMIC	680PF	10%	2KV
C706	1-124-916-11	ELECT	22MF	20%	25V
C707	1-164-085-11	CERAMIC	0.001MF	10%	50V
C711	1-164-083-11	CERAMIC	680PF	10%	50V
C712	1-164-082-11	CERAMIC	560PF	10%	50V
C731	1-164-083-11	CERAMIC	680PF	10%	50V
C732	1-164-081-11	CERAMIC	470PF	10%	50V
C751	1-164-083-11	CERAMIC	680PF	10%	50V
C752	1-164-082-11	CERAMIC	560PF	10%	50V
C771	1-164-083-11	CERAMIC	680PF	10%	50V
C772	1-164-083-11	CERAMIC	680PF	10%	50V
C773	1-164-083-11	CERAMIC	680PF	10%	50V
		<CONNECTOR>			
CN701	1-695-915-11	TAB (CONTACT)			
CN702	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P			
CN703	*1-564-509-11	PLUG, CONNECTOR 6P			
		<DIODE>			
D711	8-719-911-19	DIODE 1SS119			
D731	8-719-911-19	DIODE 1SS119			
D751	8-719-911-19	DIODE 1SS119			
D770	8-719-911-19	DIODE 1SS119			
D771	8-719-911-19	DIODE 1SS119			
D772	8-719-911-19	DIODE 1SS119			

C | UB | S

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
D773	8-719-911-19	DIODE 1SS119				
D777	8-719-109-71	DIODE RD3.9ESB1				
D790	8-719-911-19	DIODE 1SS119				
D791	8-719-911-19	DIODE 1SS119				
D792	8-719-911-19	DIODE 1SS119				
		<JACK>				
J701 ⚠	1-540-071-13	SOCKET, PICTURE TUBE				
		<COIL>				
L701	1-410-671-31	INDUCTOR	47UH			
		<TRANSISTOR>				
Q711	8-729-926-73	TRANSISTOR 2SC3271F-N				
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q731	8-729-926-73	TRANSISTOR 2SC3271F-N				
Q732	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q751	8-729-926-73	TRANSISTOR 2SC3271F-N				
Q752	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q770	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q771	8-729-200-17	TRANSISTOR 2SA1091-O				
Q772	8-729-200-17	TRANSISTOR 2SA1091-O				
Q773	8-729-200-17	TRANSISTOR 2SA1091-O				
		<RESISTOR>				
R700	1-202-549-00	SOLID	100	20%	1/2W	
R701	1-202-846-00	SOLID	470K	20%	1/2W	
R702	1-202-844-00	SOLID	330K	20%	1/2W	
R703	1-202-838-00	SOLID	100K	20%	1/2W	
R704 ⚠	1-216-370-91	METAL OXIDE	1.2	5%	2W	F
R706	1-202-842-11	SOLID	220K	20%	1/2W	
R710	1-202-824-00	SOLID	3.3K	20%	1/2W	
R711	1-249-405-11	CARBON	100	5%	1/4W	
R712 ⚠	1-215-924-91	METAL OXIDE	15K	5%	3W	F
R716	1-249-411-11	CARBON	330	5%	1/4W	
R717	1-249-393-11	CARBON	10	5%	1/4W	
R730	1-202-824-00	SOLID	3.3K	20%	1/2W	
R731	1-249-405-11	CARBON	100	5%	1/4W	
R732 ⚠	1-215-924-91	METAL OXIDE	15K	5%	3W	F
R736	1-249-411-11	CARBON	330	5%	1/4W	
R737	1-249-393-11	CARBON	10	5%	1/4W	
R750	1-202-824-00	SOLID	3.3K	20%	1/2W	
R751	1-249-405-11	CARBON	100	5%	1/4W	
R752 ⚠	1-215-924-91	METAL OXIDE	15K	5%	3W	F
R756	1-249-411-11	CARBON	330	5%	1/4W	
R757	1-249-393-11	CARBON	10	5%	1/4W	
R770	1-249-433-11	CARBON	22K	5%	1/4W	
R771	1-249-409-11	CARBON	220	5%	1/4W	F
R772	1-249-409-11	CARBON	220	5%	1/4W	F
R773	1-249-409-11	CARBON	220	5%	1/4W	F
R774	1-249-437-11	CARBON	47K	5%	1/4W	
R775	1-249-417-11	CARBON	1K	5%	1/4W	
R776	1-249-409-11	CARBON	220	5%	1/4W	
R790	1-249-417-11	CARBON	1K	5%	1/4W	
R791	1-249-413-11	CARBON	470	5%	1/4W	
		<VARIABLE RESISTOR>				
RV701 ⚠	1-241-656-21	RES, ADJ, METAL FILM 110M				
RV702	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				

REF.NO.	PART NO.	DESCRIPTION				REMARK
	*1-647-183-11	UB BOARD ********				
		<CONNECTOR>				
CN1451	*1-564-523-11	PLUG, CONNECTOR 8P (CKV-20HX1)				
CN1452	*1-564-521-11	PLUG, CONNECTOR 6P				
		<JACK>				
J1451	1-537-538-11	TERMINAL, S (CKV-20HX1)				
J1452	1-563-547-31	JACK BLOCK, BNC PIN 3P (CKV-20DST1)				
J1452	1-750-780-11	JACK BLOCK, BNC PIN 3P (CKV-20HX1)				
J1453	1-750-779-11	JACK BLOCK, BNC PIN 3P (CKV-20DST1)				
J1454	1-750-700-11	CONNECTOR, SQUARE 8P (CKV-20HX1)				
		<RESISTOR>				
R1451	1-247-804-11	CARBON	75	5%	1/4W	(CKV-20HX1)
R1452	1-247-804-11	CARBON	75	5%	1/4W	(CKV-20HX1)
R1453	1-247-804-11	CARBON	75	5%	1/4W	(CKV-20HX1)
R1454	1-247-895-00	CARBON	470K	5%	1/4W	(CKV-20HX1)
R1455	1-247-895-00	CARBON	470K	5%	1/4W	(CKV-20HX1)
R1456	1-247-804-11	CARBON	75	5%	1/4W	(CKV-20DST1)
R1457	1-247-895-00	CARBON	470K	5%	1/4W	(CKV-20DST1)
R1458	1-247-804-11	CARBON	75	5%	1/4W	(CKV-20HX1)
R1459	1-247-895-00	CARBON	470K	5%	1/4W	(CKV-20HX1)
R1461	1-249-417-11	CARBON	1K	5%	1/4W	
R1462	1-249-417-11	CARBON	1K	5%	1/4W	(CKV-20HX1)
	*1-646-641-11	S BOARD *******				
		<CAPACITOR>				
C805	1-124-903-11	ELECT	1MF	20%	50V	
C806	1-137-399-11	FILM	0.1MF	5%	50V	
C807	1-102-157-00	CERAMIC	560PF	10%	500V	
C809	1-137-367-11	FILM	0.0033MF	5%	50V	
C810	1-137-399-11	FILM	0.1MF	5%	50V	
C811	1-137-399-11	FILM	0.1MF	5%	50V	
C812	1-137-375-11	FILM	0.068MF	5%	50V	
C813	1-124-907-11	ELECT	10MF	20%	50V	
C814	1-124-907-11	ELECT	10MF	20%	50V	
C815	1-124-907-11	ELECT	10MF	20%	50V	
C816	1-124-907-11	ELECT	10MF	20%	50V	
C817	1-124-907-11	ELECT	10MF	20%	50V	
C819	1-164-070-11	CERAMIC	100PF	5%	50V	
		<CONNECTOR>				
CN801	*1-573-979-11	CONNECTOR, BOARD TO BOARD 11P				

S

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D800	8-719-911-19	DIODE 1SS119	
		<IC>	
IC801	8-759-084-09	IC Z8612812PSC	
		<COIL>	
L801	1-410-470-11	INDUCTOR 10UH	
		<TRANSISTOR>	
Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<RESISTOR>	
R801	1-249-416-11	CARBON 820 5% 1/4W	
R802	1-249-416-11	CARBON 820 5% 1/4W	
R803	1-249-416-11	CARBON 820 5% 1/4W	
R804	1-249-425-11	CARBON 4.7K 5% 1/4W	
R805	1-249-425-11	CARBON 4.7K 5% 1/4W	
R806	1-249-423-11	CARBON 3.3K 5% 1/4W	
R807	1-249-425-11	CARBON 4.7K 5% 1/4W	
R808	1-249-417-11	CARBON 1K 5% 1/4W	
R809	1-249-441-11	CARBON 100K 5% 1/4W	
R810	1-249-437-11	CARBON 47K 5% 1/4W	
R812	1-249-417-11	CARBON 1K 5% 1/4W	
R813	1-249-417-11	CARBON 1K 5% 1/4W	
R814	1-249-413-11	CARBON 470 5% 1/4W	
R815	1-249-427-11	CARBON 6.8K 5% 1/4W	
R816	1-249-429-11	CARBON 10K 5% 1/4W	
R817	1-249-433-11	CARBON 22K 5% 1/4W	
R818	1-249-417-11	CARBON 1K 5% 1/4W	
R820	1-249-433-11	CARBON 22K 5% 1/4W	
R821	1-249-433-11	CARBON 22K 5% 1/4W	
R822	1-249-429-11	CARBON 10K 5% 1/4W	
		**********	
		MISCELLANEOUS	
		**********	
⚠	1-426-358-11	COIL, DEMAGNETIZATION	
⚠	1-451-280-11	DEFLECTION YOKE (Y21PXA2)	
	1-452-032-00	MAGNET, DISK; 10MM φ	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM φ	
	1-452-277-00	MAGNET, BMC	
	1-573-657-11	PLUG, F-PIN	
⚠	1-751-057-11	CORD, POWER (WITH CONNECTOR)	
SP901	1-504-304-11	SPEAKER (8CM) (CKV-20HX1)	
SP902	1-504-304-11	SPEAKER (8CM) (CKV-20HX1)	
	1-504-252-11	SPEAKER (9X5CM) (CKV-20DST1)	
V901	⚠ 8-738-764-05	PICTURE TUBE (A51JUH51X)	
		**********	
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	3-756-890-21	MANUAL, INSTRUCTION (ENGLISH)	
	3-756-890-31	MANUAL, INSTRUCTION (FRENCH)	
	*4-039-442-01	CUSHION (UPPER) (ASSY) (CKV-20HX1)	
	*4-039-443-01	CUSHION (LOWER) (ASSY) (CKV-20HX1)	
	*4-039-550-01	INDIVIDUAL CARTON (CKV-20HX1)	
	*4-039-627-01	INDIVIDUAL CARTON (CKV-20DST1)	
	*4-039-628-01	CUSHION (UPPER) (ASSY) (CKV-20DST1)	
	*4-039-629-01	CUSHION (LOWER) (ASSY) (CKV-20DST1)	
	*4-380-340-01	BAG, PROTECTION	
		REMOTE COMMANDER	
	1-466-966-11	REMOTE COMMANDER (CKV-20DST1/RM-Y116)	
	9-903-826-01	COVER, BATTERY (CKV-20DST1/RM-Y116)	
	1-467-060-11	REMOTE COMMANDER (CKV-20HX1/RM-Y117)	
	9-903-826-01	COVER, BATTERY (CKV-20HX1/RM-Y117)	

Sony Corporation
TV Group

9-964-942-01

English
93EJ0947-1
Printed in Japan
© 1993. 5